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Proceedings of the Multidisciplinary Conference on the Sinai Desert



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Introduction

On Saturday 29 and Sunday 30 November 2014 a successful multidisciplinary conference on the Sinai Desert was held at the Netherlands-Flemish Institute in Cairo. In these Proceedings of the Multidisciplinary Conference on the Sinai Desert the reader will find a selection of papers read by participants during this conference.

The Sinai Desert is a key area in many senses, and this peninsula has through the ages served as a natural land bridge between Asia and Africa. The multidisciplinary Sinai conference covered a wide variety of topics, such as: dialects spoken in Sinai today by Bedouin tribes, the proto-Sinaitic alphabet as discovered at Wadi Maghara, treasures of St. Catherine's Monastery, small farming initiatives by Bedouin, archeological finds, customary law of the Bedouin, etc.

The two days were divided into four sessions, each covering their own theme: topics in Archaeology, in History, Contemporary subjects and two sessions discussing different aspects of Heritage Conservation. The variety of topics was aptly illustrated by the variety of lecturers who presented their papers. Over 25 speakers participated, ranging from Egyptian, Italian and Greek scholars to inhabitants of the heart of the Sinai Desert: each lecturer talked about his or her subject with passion underscoring the uniqueness and diversity of the area.

The conference was very well attended and was also well received by the participants themselves. The multidisciplinary approach allowed for a truly interdisciplinary exchange of thoughts between speakers and audience. We can look back on a very successful and interesting conference. We conclude that the conference reached its goal: to map at least some of the diversity of one of the historical key areas in the Middle Eastern region: the Sinai Desert.

We would like to thank all participants and everyone else involved in making this conference such a success. We owe special thanks to the Netherlands Embassy in Cairo for their generous support, which enabled us to organize the conference.

Dr Rudolf de Jong
Director of NVIC

St. Catherine's Monastery Complex: Conservation Highlights

A.Galanos Y. Doganis, Lithou Sintirissis Inc.

Introduction

Our conservation team's long-standing relationship with the community and the built structures of St. Catherine's Monastery has informed a constantly evolving approach to conservation and refinement of restoration materials. Various conservation proposals for the tower of St. George in the N. fortress wall (1998), the *Katholikon* including its timber roof (2001), the Fortress walls (2008), three chapels in the S. Fortress wall (2013) culminated in three pilot projects which have built upon the initial identification of building materials and assessment of their pathology. Conservation proposals have aimed to retain and repair the building fabric with respect to historical phases without compromising usability or the vernacular character of the complex. The following presentation gives a sense of the work undertaken over the years by highlighting interesting finds, describing the conservation approach with a focus on the authentic 6th century structures where the diffusion of Graeco-Roman construction technology and know-how in terms of mortar technology as quoted in relevant sources (Vitruvius, Pliny the Elder, Theophrastos) is evident from the small scale, the details to the whole. The trust of the community, His Eminence Archbishop Damianos and the Council of Elders, and of the Egyptian Archaeological Service have been most valuable over years. The collaboration with the restoration architects has evolved into a fruitful dialectic as regards the monastery complex.

Geology-climate

The monastery is situated in the NE part of the Sinai massif at an altitude of 1600m in the Wadi ed-Deir at the foothill of Gebel Musa and Safsafa. The Sinai mountain block of the upper Sinai massif, contains some of the oldest geological formations dating to the Pre-Cambrian era. The monastery is situated in the center of a circular dyke of a red plutonic rock, which contains coarse to medium-grained granites, trachytes, andesites and other igneous rocks. It is believed that the monastery was constructed partly on granite rock (south section of the complex) and partly in the valley trough where sediments are largely constituted of eroded granite (north section of the complex). Though rainfall is sporadic in the area, soil absorption is capable of

maintaining a free aquifer horizon which supplies the masonry walls with humidity on an almost yearly basis. Rising damp seems to be the sole most important cause of decay of the fortress walls. The climate in the area is arid, summers are long and hot and winters are mild. The mean maximum temperature is 30°C in summer and 1°C in winter and relative humidity ranges throughout the year from 18-25%. Precipitation amounts to less than 50mm/year.

The building materials

Red granite was used as ashlar in the Justinian construction and as rubble masonry in the foundations and infill, as well as for later additions (Illustration 1). It was quarried from the SW foothill of Jebel Aribah, a few hundreds of meters from the fortress. The workmen made use of the existing system of joint set which runs through the superficial layers of the rock formation (Illustration 2). Erosion is due mostly to the effects of heating-cooling cycles (daily temperature fluctuations can range 10°C) resulting in disaggregation of the stone matrix (Illustrations 3, 4), soluble salt damage and discoloration.



Illustration 1. The S. fortress wall.

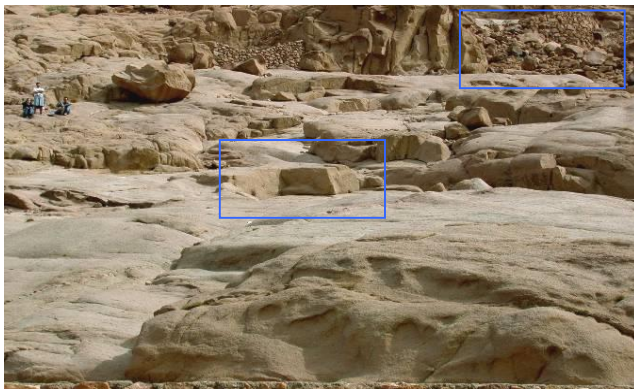


Illustration 2. Existing joint set in the rock formation.



Illustration 3. Granite erosion.



Illustration 4. Artificial weathering tests, sound granite. Note the propagation of cracks in the stone matrix and deformation of samples.

An off-white sandstone was used in the late 19th century, in the construction of the Katholikon's belltower by craftsmen from the Greek island of Tinos, the upper section of the fortress walls (NW corner) and the entrance gate to the west garden. The sandstone's small proportion of binding material and its high porosity are conducive to granular disintegration.

The mortars used in the 6th century have been better preserved than mortars used in later building campaigns, illustrating a sophisticated mortar technology, considered a Roman innovation. The choice of materials in terms of composition and use of additives as well as application reflect the cosmopolitan nature of the craftsmen.

A *brownish infill mortar*, was used in the walls' sandwich construction and foundations; it contains granite aggregate, clay from the soil, a small quantity of lime, fibers and ash (Illustration 5). An off-white *pointing mortar* which was applied overlapping the ashlar joints with an incised line delineating the joint, contains granite aggregate, lime and brick dust (Illustration.6). *Plasters*, were for the most part composed of two layers, a coarse layer and a fine layer destined to receive decoration. The coarse layer contains fine granite aggregate and lime or earth as a binder, and the fine layer contains lime, gypsum and very little or no aggregate (Illustrations 7, 8). The use of gypsum, either present in the aggregate or the soil or added to the mortars improves setting qualities and workability, an advantage well-known since antiquity.¹ Coal particles, ash and brick dust² were used as additives in order to render the mortars hydraulic. The reported used of wood ash in Roman aqueduct mortars in the Levant

¹ Anastasios Orlandos, *Building Materials of the ancient Greeks* (Athens: Athens Archaeological Society N°37, 1994) 58-61 (in Greek).

² Ioannis Ioannou and Maria Filokyprou, "Experimental designs of lime mortars based on mortar technology of ancient mortars in Cyprus" (paper presented at the First Conference on Building Materials, Athens, Greece, May 21-23, 2008) (in Greek).

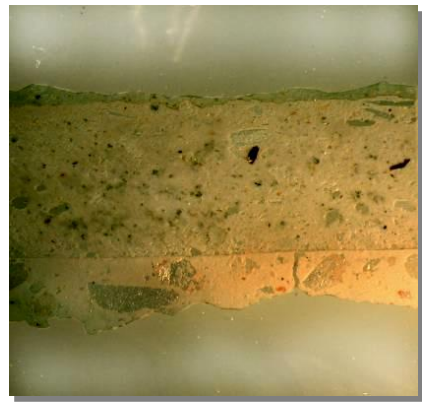
and other desert environs, has been attributed to its properties of water retention which would allow mortars to set and cure with minimal shrinkage and cracking.³ Fibers such as straw and hairs provided reinforcement.



Illustration 5. Infill earth mortar.



Illustration 6. Pointing mortar.



Illustrations 7^a, 7^b. Interior of the Katholikn roof. The plaster is constituted of an internal layer of lime, fine granite aggregate and an external layer of lime and gypsum.



Illustrations 8^a, 8^b. St. George's Tower, N. Fortress wall. The plaster is constituted of an internal earth mortar layer which contains granite aggregate, ash and straw and an external layer of lime mortar which contains gypsum and linseed oil.

³ Sarah C. Stokely, and Frank Matero, "Using analytical techniques to understand historic mortar traditions at Cairo's Ayyubid Wall" (paper presented at the 1st Historical Mortars Conference, Lisbon, Portugal, September 24-26, 2008).

The mortars used after the 6th century, were distinguished according to form - appearance and manner of application. In terms of composition, they contain the same local materials (granite aggregate) mixed in a less sophisticated way, the lime binder was replaced with earth, without hydraulic additives. They are overall less meticulously applied, which reflects a relative isolation and scant import of knowledge to the site, as the Arab conquest of the peninsula in the 7th century reduced monasticism and hence building activity.

Condition assessment - highlights

Materials and condition mappings of the complex executed over the years⁴, provided an overall view of damage and served to prioritize areas in need of repair. In order to assess the influence of environmental parameters on the building materials, ambient measurements of RH and surface temperature were complemented with % Wood Moisture Equivalent measurements. In order to correlate deterioration phenomena with causes, extensive testing programs were undertaken for the stones and the numerous mortars encountered in the complex which included the examination of characteristics such as hydric properties, porosity, mechanical strengths, XRD, and for mortars, the simple mortar analysis,⁵ chemical analysis etc. The results were correlated with the characteristics of the proposed mortars.

Severe deterioration of the building fabric was concentrated on the lower zones of the Katholikon and fortress walls, primarily on the north and east elevations. The Katholikon's granite ashlar on the north elevation were eroded to a significant depth, along the entire length of the elevation (Illustration 9). Delaminations in this zone of basal erosion, necessitated repeated mortar repairs over the years. It seems that the poor state of the masonry on the east elevation, generated the need for dressing the façade with sandstone ashlar in the 19th century; many of these ashlar are eroded, whereas the Iznik decorative tiles on the interior of the Chapel of the Burning Bush have lost their glazing while others are flaking (Illustration 10). Thick salt incrustations on both granite ashlar and repair mortars on the north wall were

⁴ Doganis, Yanna and Galanos, Amerimni, "Study for the conservation of the South fortress wall, Holy Monastery of St. Katherine, Mt. Sinai," (unpublished report, Athens, 2007), Koufopoulos, Petros et al. "Report on the condition of the foundation and lower walls of the Monastery of St. Catherine's Sinai, Egypt," (unpublished report Athens, 2002) Koufopoulos, Petros et al. "Conservation of Roofs and the facades of St. Catherine's Monastery Church, Mount Sinai, Egypt," (unpublished report, Athens, 2001.)

⁵ Jeanne-Marie Teutonico, *A Laboratory Manual for Architectural Conservators* (Rome: ICCROM, 1988) 113.

identified as halite. Rising damp and the concomitant salt crystallization cycles were identified as the sole most important cause of decay not only of the North and East elevations of the basilica walls but also of the respective sections of the fortress walls. For many years, olives and other foodstuff were preserved with salt, and drained on racks in a storeroom in the NE wing of the fortress. These salts' byproducts migrated over the years from the storeroom ground (soil) beneath the courtyard paving and absorbed through the masonry walls. The synergy of three related factors – an unlimited supply of sea salt nearby, an absorbent subsoil of sediment and a steady supply of water - led to the continuous transfer of soluble salt solutions to the basilica walls. The foundations of this part of the complex are set in the valley trough on a subsoil capable of maintaining a free aquifer horizon and the regular watering of the Burning Bush, located a few meters away, contributed for many years to ground water absorption. Further to the installation of a drainage system and the effects of a drier climate, WME measurements diminished, corroborating the efficiency of such measures.

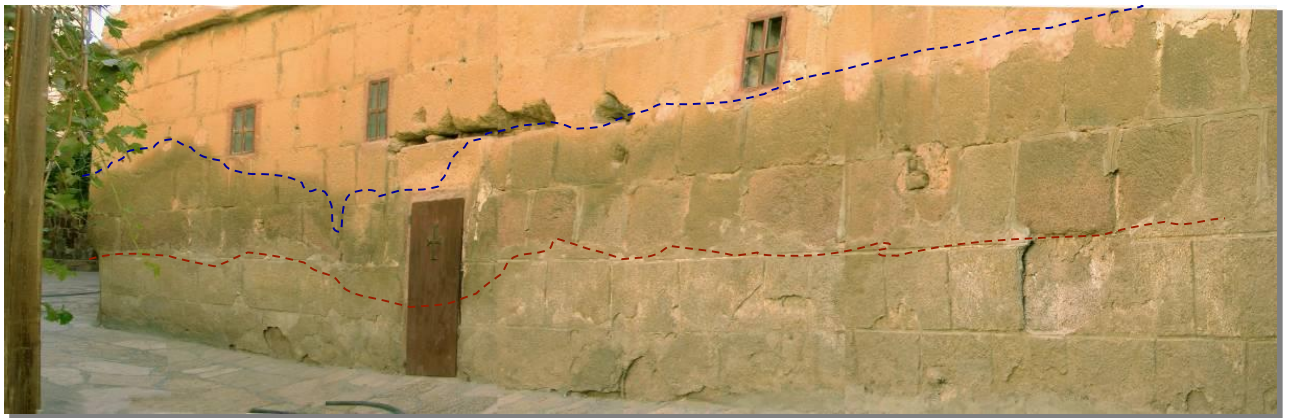


Illustration 9. North elevation, Katholikon. Rising damp is characterized by a moisture gradient within the walls, which can reach up to 2 m from ground level.

--- Discoloration - - - Erosion



Illustration 10^a, 10^b. East elevation, Katholikon. Exterior sandstone cladding, interior cladding of Iznik tiles.



Illustration 11. NE wing of the fortress, storeroom. Sea salt crusts on timber beams.

Conservation aims

The conservation proposals for the various parts of the monastery complex aim to retain, restore and repair authentic building fabric and later additions based on the tenet that all historic phases constitute an integral part of the complex. In designing compatible restoration mortars, emphasis was given to the use of locally available materials which practice is not only historically accurate but aims to minimize difficulties related to the site - transport, costs, availability of materials - without compromising outcome and durability. Local sands are used in specific aggregate size denominations for mortar mixes, as has been the case in the conservation repair and organic building of the complex. Some materials are imported, like a natural hydraulic lime binder, much like the builders of St Catherine's imported lime. The prescribed materials were used in the following projects: the museum in the N. Wall (2001) (Illustration 12), the restoration of the E. wall implemented by an Egyptian team (2009)(Illustration 13), and the preliminary conservation of three chapels in the S. Wall (2013) in view of construction undertaken in the Library configuration project.



Illustrations 12^a, 12^b, 12^c.Pointing and grouting work in the Museum, N. Fortress Wall



Illustration 13. Conservation work on the E. Fortress wall.

The Katholikon timber Roof

The well-preserved timber roof structure of the Katholikon, is one of the few remaining prototypes of such construction, most of it dating to the 6th century. Good preservation is due to the arid climate but also in part to the selection of sound timber in terms of species and section for the construction of its principal components, by the builders. The roof construction is comprised of 15 trusses, with longitudinal tie beams (used as trunks) tying the N & S walls of the central nave. The upper part of the trusses feature a king post and two rafters which bear the ridge. The trusses are reinforced with struts fastened onto the rafters with corresponding saddles. The rafters bear the decks which are constituted of purlins, boards and joint covers. Joints are elegant and simple, most of them are either of the mortise and tenon type or scarf joints. Simple nails were used for joining the timber components, the authentic ones are countersunk into the timber and feature circular head hammered in the shape of a half-sphere with a distinct moulding on the circumference.

Analysis combined information gathered from oral and scant written sources, photographs and observations. The following information was noted on measured drawings: element dimensions, construction details such as joints, existence of tool marks in order to determine whether the timber was hewn or sawn, description of hardware. Extensive sampling led to the identification of timber species⁶ and metallographic analysis of the nails was undertaken.⁷ The findings added to the painstaking work and analysis of many scholars who have studied the timber roof⁸ on the roof's construction-repair history, and attest to the way Roman construction technology was imported to the site.

The roof was constructed mainly with three species of timber, fir, cypress and pine, none of which are indigenous to the area. The main elements of the original construction (the tie beams, the trusses, beams, the ridge and the deck purlins) are made of fir as is the window lintel of the south tower of the Katholikon, which area has remained undisturbed since construction.

Romans considered fir high quality timber, as it could grow to a great size, and was therefore versatile and resistant to warping.⁹ Careful attention was given to use the heartwood as it is

⁶ Koufopoulos et al. "Conservation of Roofs and the facades of St. Catherine's Monastery Church," Appendix 7.

⁷ Koufopoulos et al. "Conservation of Roofs of St. Catherine's Monastery Church," Appendix 8.

⁸ Nili Liphshotz and Yoav Waisel, "Dendroarchaeological Investigation in Israel - St. Catherine's Monastery in Southern Sinai", *Israel Exploration Journal* 26 (1976)42, Gennaro Tampone, Luigi Campa and Christos Katsimbini Christos, "Report on the condition of the roof at St. Catherine's Monastery," (unpublished report Athens, 1989) (in Italian).

⁹ Roger B. Ulrich, *Roman Woodworking* (New Haven CT:Yale University Press 2007) 242.

more durable, has a high resistance to bending, it contains extractives often toxic to microorganisms and has a lower moisture content than sapwood. Cypress was used in both the original roof construction as well as in subsequent repairs. It was probably imported to the site by the first pilgrims, possibly from Mt. Athos or Cyprus which means it would have needed some time to grow into adequate trees to be felled and used in construction.¹⁰ Cypress was also prized by Romans for its durability, and resistance to decay; its suitability for carving made it appropriate for carved doors. As a matter of fact, the Katholikon's inner door which dates to the 6th century was also found to be constructed of cypress.¹¹

The Chapel of the Archangels in the South fortress wall

The narrow barrel-vaulted chapel (L 4,60×W 0,9×H 2,45m) is situated on the first floor of the central tower of the south fortress wall (Illustration 14). The two narrow sides feature two half-domed niches, the altar to the east and a corresponding niche to the west.

The wall paintings which are attributed to the 6th century feature: a grid of simple -naïve - depictions of birds, plant and floral motifs and crosses rendered in green, red and black on the barrel vault (Illustration 15); an imitation of stone veneers and pilasters complete with base and capital, rendered in grey, green and red on the long walls (Illustration 16), which are reminiscent of the veneers which adorned the churches in metropolitan centers such as Constantinople and Ravenna.; a “frieze” of two superimposed squares within which is inscribed a red flower framed by black and white geometric shapes on the lower zone of the walls; a bejeweled cross with hanging jewels (emeralds and rubies) and chains framed with conical candlesticks on the altar and what is probably a maritime scene on the western niche. Geometric floral friezes rendered in black and white in the east and in red and light blue frame the dome openings on both the east and west elevations.

¹⁰ Joseph J. Hobbs, *Mount Sinai*, (Austin, TX: University of Texas Press 1995) 77.

¹¹ Liphshitz “Dendroarchaeological Investigation in Israel,” 42.



Illustration 14. The Justinian Chapel in the S. Fortress wall.



Illustration 15^a, 15^b, 15^c. The decorative program on the barrel vault.



Illustration 16^a, 16^b. The decorative program on the walls, imitates marble veneers with polychrome marbles reminiscent of those which adorned churches in Constantinople (Kariye Camii)

The authentic fine plaster layer which was applied directly on the 6th century granite construction, is an earth mortar with fine granite aggregate, similar to the plaster found on the interior of St George's chapel in N. fortress wall, which also dates to the 6th century. The painting was executed in fresco on this single mortar layer.

A preliminary analysis of the black, red and green pigments illustrate the import of Graeco-Roman technology to Mt. Sinai. The black pigment seems to be carbon black, ash made from charring animal bones in closed vessels which improves working quality and give a superior black.¹² The red pigment seems to be red lead which was a pigment of antiquity and it has been posited that it was not used in Egypt until Graeco-Roman times.¹³ Derived from silver, it is one of the most famous Roman pigments, considered sacred by Romans who during feasts used it to paint of Jupiter's effigy, as well as the bodies of the victorious generals; furthermore, it was also added to the unctions used at celebratory banquets.¹⁴ Although green pigments are most often based on copper compounds and gold, silver and ancient copper mines occur in the Protectorate of St. Katherine's, the green pigment seems to be green earth which originates as marine clays made up of glauconite (occurs in marine sediments) and celadonite (weathered volcanic rocks). Green earth was used as a pigment on Roman wall paintings in Pompeii and Dura-Europos¹⁵. Pliny the Elder notes that it has been used in fresco and tempera and that good quality green earth was naturally available in the Mediterranean area (Smyrna, Nicosia, Verona).¹⁶ No such mineral deposits appear to have been found in Egypt, however green earth has been identified on Egyptian cartonnage fragments pointing to the influence of the Mediterranean world.¹⁷

Conclusion

The analysis of tangible evidence – materials and craft –from the large-scale to the small details which survived throughout the centuries illustrates the diffusion of the knowledge and

¹² Rutherford Gettens and George Stout *Painting Materials A Short Encyclopedia* (New York: Dover Publications 1966) 99.

¹³ Gettens and Stout, *Painting Materials*, 153.

¹⁴ Alekos A. Levidis, trans. *Pliny the Elder Natural History, Book 35* (Athens: Agra Publishers, 1994) 197.

¹⁵ Gettens and Stout, *Painting Materials*, 196.

¹⁶ Ruth Siddall, "Pigments and Painting Techniques of Roman Artists" *infocus 2*, (June 2006): 20-31. www.rms.org.uk/Resources/.../SIDDALL

¹⁷ David A. Scott et al. "Examination of some pigments, grounds and media from Egyptian cartonnage fragments in the Petrie Museum, University College London" *Journal of Archaeological Science* 36 (2009): 923-32.

skill of the Justinian era to Sinai. Following that, with a few exceptions like the Napoleonic era or the 1870's, the building or repair materials reflect the local traditions, the historical context, resulting in vernacular architecture. An in-depth assessment and analysis of building materials, set in the historical context, informs conservation proposals and interventions.

Bibliography

- Doganis, Yanna and Galanos, Amerimni. "Study for the conservation of the South fortress wall, Holy Monastery of St. Katherine, Mt. Sinai." Unpublished report, Athens, 2007.
- Gettens Rutherford and Stout George. *Painting Materials: A Short Encyclopedia*. New York: Dover Publications, 1966.
- Hobbs, Joseph, *Mount Sinai*. Austin, TX: University of Texas Press, 1995.
- Ioannou, Ioannis and Filokyprou, Maria, "Experimental designs of lime mortars based on mortar technology of ancient mortars in Cyprus." Paper presented at the First Conference on Building Materials, Athens, Greece, May 21-23, 2008. (in Greek).
- Koufopoulos, Petros, Koufopoulos, Marina, Zambas, Costas, Galanos, Amerimni and Doganis, Yanna. "Conservation of Roofs and the facades of St. Catherine's Monastery Church, Mount Sinai, Egypt." Unpublished report, Athens 2001.
- Koufopoulos, Petros, Koufopoulos, Marina, Zambas, Costas, Galanos, Amerimni and Doganis, Yanna. "Report on the condition of the foundation and lower walls of the Monastery of St. Catherine's Sinai, Egypt." Unpublished report, Athens 2002.
- Levidis, Alekos, trans. *Pliny the Elder Natural History, Book 35 Painting, Sculpture and Architecture*. Athens: Agra Publishers, 1994. (in Greek)
- Lipshitz, Nili and Waisel, Yoav "Dendrochronological Investigation in Israel – St. Catherine's Monastery in Southern Sinai" *Israel Exploration Journal*, vol. 26, 1976, 39-44.

Orlandos, Anastasios. *Building Materials of the Ancient Greeks*, Athens: Athens

Archaeological Society N° 37, 1994. (in Greek)

Scott, David A., Warmlander, Sebastian, Mazurek, Joy and Quirke, Stephen. "Examination of some pigments, grounds and media from Egyptian cartonnage fragments in the Petrie Museum, University College London." *Journal of Archaeological Science* 36 (2009): 923-32.

Siddall, Ruth. "Pigments and Painting Techniques of Roman Artists" *InFocus* 2, (June 2006): 20-31. www.rms.org.uk/Resources/.../SIDDALL

Stokely, Sarah C. and Matero, Frank. "Using analytical techniques to understand historic mortar traditions at Cairo's Ayyubid Wall." Paper presented at the 1st Historical Mortars Conference, Lisbon, Portugal, September 24-26, 2008.

Tampone, Gennaro, Campa, Luigi, Katsibinis, Christos "Report on the condition of the roof at St. Catherine's Monastery." Unpublished report, 1989 (in Italian).

Ulrich, Roger B. *Roman Woodworking*. New Haven CT: Yale University Press, 2007.

The Sinai Alphabet: Current State of Research

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Introduction

Ever since its discovery at the beginning of the twentieth century, the (Proto-)Sinaitic script of Serabit el-Khadim has been considered the oldest known representative of a tradition that produced the modern alphabetic notation systems, such as the Arabic, Cyrillic and Latin alphabets. The dating of the script, however, remains controversial, and so does its precise role in the alphabetic tradition. The discovery of similar inscriptions in the Wadi el-Hol in southern Egypt has cast doubt on a specific Sinai source or development. It also makes us painfully aware of the possibility that much important data, including other alphabetic notations, is missing. What could have been the origin of the script(s) known from Serabit el-Khadim and Wadi el-Hol? How did pharaonic Egyptian culture and its writing systems contribute to its development?

Discovery and early interpretation

In 1905, on an expedition in the Wadi Maghara and in Serabit el-Khadim, Sir William Matthew Flinders Petrie discovered inscriptions partly consisting of characters that reminded him of Egyptian hieroglyphs. These inscriptions had been made on rock surfaces near ancient turquoise mines, and on objects found at Serabit el-Khadim, the site of an Egyptian temple for the goddess Hathor, ‘Lady of Turquoise’. Copper and turquoise were the principal materials exploited by the Egyptians in the Sinai Desert. The Hathor temple was mainly built at the command of pharaohs of the Middle Kingdom (ca. 2050-1650) and the New Kingdom (ca. 1550-1070). Some of the leaders of the gangs of labourers in those years erected stelae with Egyptian hieroglyphic inscriptions, many of which can still be seen at the site

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The newly discovered inscriptions were clearly different from the hieroglyphic texts, and Petrie realized that they were relevant to the early history of the alphabet. Shortly after his discovery, he wrote: “I am inclined to see in this one of the many alphabets which were in use in the Mediterranean lands long before the fixed alphabet selected by the Phoenicians.”¹ His reference to ‘Mediterranean lands’ reflects the theory, current in the early twentieth century, that the alphabet was of Mediterranean origin, and not Near Eastern, or Semitic.² Petrie was a firm proponent of this theory, and the phrase ‘many alphabets’ expresses his personal belief that very early in history different alphabetic scripts had developed out of equally different systems of linear signs, or marks, throughout the Mediterranean World. The marks he saw on pottery and other objects from settlement sites he had excavated elsewhere in Egypt were seen by him as alphabetic characters, which could have been used for writing as early as 2,500 BCE.³ The Sinai inscriptions, he argued, were only a later phenomenon in the multi-stranded alphabetic history, and not a very successful one at that: instead of being a “precursor of the Phoenician”, it was “merely a local barbarism”; a “jumble of signs acquired by the local workmen (...) and used for writing”.⁴

Other scholars soon realized, however, that the inscriptions were of paramount importance for the history of the alphabet, and in 1916 Sir Alan Gardiner published his interpretation, which included the reading of one particular string of characters which Petrie already felt was a recurrent religious phrase (see illustration 1).⁵ This string was read by Gardiner as *b-‘l-t* ‘Ba‘alat’, the name of female deities in West Semitic languages, such as Biblical Hebrew and Phoenician. Gardiner’s assumptions were, first, that the inscriptions reflect a West Semitic language and, second, that ‘Ba‘alat’ was the Semitic name of the goddess known by the Egyptians as Hathor, Lady of Turquoise. The phonetic identification of the individual signs was based on their similarity with later Canaanite alphabetic signs, on their supposed hieroglyphic origin, and on the names of alphabetic characters in Biblical tradition. Thus the sign for *b*, a rectangle open on one side, was thought to have been inspired by the Egyptian


¹ William M.F. Petrie, *Researches in Sinai* (London: John Murray, 1906), 131.

² Suggested regions of origin were Anatolia, Cyprus and Crete; see e.g. Alan H. Gardiner, “The Egyptian Origin of the Semitic Alphabet,” *The Journal of Egyptian Archaeology* 3 (1916): 2.

³ See, e.g., William M.F. Petrie, *Seventy Years in Archaeology* (London: Sampson Low, Marston & Co., 1932), 109.

⁴ *Ibid.*, 195-196. In his book *The Formation of the Alphabet* (London: MacMillan and Co., 1912), no reference is made at all to the Sinai inscriptions; an astonishing fact duly noted by Gardiner, “The Egyptian Origin,” 6, note 1.

⁵ Petrie, *Researches in Sinai*, 129; Gardiner, “The Egyptian Origin,” 14-15.

hieroglyph for ‘house’ (*pr*): . The name of the Hebrew character for *b* is *bêt* ‘house’. According to this hypothesis, the inventors of the Sinai alphabet would have applied the principle of acrophony, and assigned to a hieroglyphic sign the initial sound of a word in their own language for the thing represented by that sign.

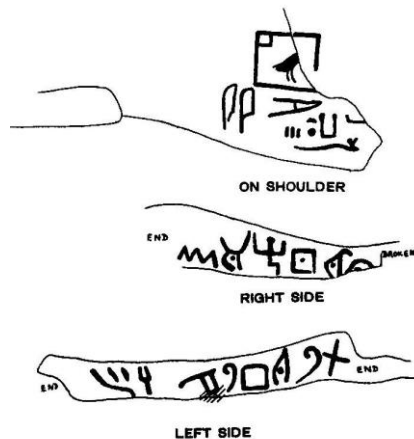


Illustration 1: inscriptions on sphinx BM EA 41748: ‘Beloved of Hathor, [Lady of] Turquoise’ (on shoulder), m-’-h-b-’-l-t(?) (right side, from left to right) and ...-l-b-’-l-t(?) (left side, from left to right)⁶

Gardiner did not go beyond the reading of *b-’-l-t*, and even this he considered ‘an unverifiable hypothesis’, as he could not read any other word in the Sinai inscriptions. Later authors added further readings. A strong suggestion made by Robert Eisler was to read a hypothetic sequence *m-h-b-’-l-t* as ‘Beloved of Ba‘alat’.⁷ This sequence occurs, together with another phrase possibly reading *l-b-’-l-t* ‘for Ba‘alat’, on the most famous object from Serabit el-Khadim, a small sandstone sphinx now in the British Museum (BM EA 41748; see illustrations 1 and 2). Directly over *m-h-b-’-l-t* on the same sphinx is an Egyptian hieroglyphic inscription reading ‘Beloved of Hathor, [Lady of] Turquoise’. Eisler’s suggestion is therefore not only backed up by Hebrew grammar and the tentative phonetic interpretation of the individual signs (most of which were already read by Gardiner), but also by an Egyptian inscription with the same meaning on the same object.

⁶ From: Alan H. Gardiner and T. Eric Peet, *The Inscriptions of Sinai I*, 2nd edition rev. by Jaroslav Černý (London: Egypt Exploration Society, 1952), pl. LXXXII, no. 345.

⁷ Robert Eisler, *Die kenitischen Weihinschriften der Hyksoszeit im Bergbaugebiet der Sinaihalbinsel* (Freiburg im Breisgau: Herdersche Verlagshandlung, 1919), 31-35.



*Illustration 2: sphinx BM EA 41748 from Serabit el-Khadim*⁸

These interpretations still hold.⁹ However there are many more inscriptions on objects from, or locations at Serabit el-Khadim, and these remain with no convincing interpretation.¹⁰ As a consequence, the Sinai alphabetic script receives little attention in general reference works on the history of writing, such as *The World's Writing Systems* by Peter Daniels and William Bright. The following quote from that book makes clear why this is so: "A small and difficult body of texts called the Proto-Sinaitic inscriptions, dating from the end of the Middle Bronze Period, seems to be relevant to the prehistory of the alphabet. Despite various attempts, it cannot be said that they have been deciphered."¹¹

Historical and cultural context

The above quote assigns a rather late date to the Sinai alphabetic inscriptions (end of the Middle Bronze Period, or thirteenth century BCE). Daniels and Bright are not the only

⁸ From: Petrie, *Researches in Sinai*, fig. 141 facing p. 132.

⁹ See e.g. Benjamin Sass, *The Genesis of the Alphabet and its Development in the Second Millennium B.C.* (Wiesbaden: Otto Harrassowitz, 1988), 12-14; Ludwig D. Morenz, *Die Genese der Alphabetschrift. Ein Markstein ägyptisch-kanaanäischer Kulturkontakte* (Würzburg: Ergon-Verlag, 2011), 152-153.

¹⁰ Despite William F. Albright's suggestions ("The Proto-Sinaitic Inscriptions and their Decipherment," Cambridge, Mass.: Harvard University Press, 1966.) for several inscriptions (refuting Eisler's interpretation of *m-h-b- 'l-t*: *ibid.*, 16).

¹¹ M. O'Connor, "Epigraphic Semitic Scripts," in *The World's Writing Systems*, ed. Peter T. Daniels and William Bright (New York & Oxford: Oxford University Press, 1996), 90; see also Daniels, "The First Civilizations," in the same volume, 29. The book refers to the earliest Semitic alphabets as *abjad*, rather than alphabet, since they lack vowel notation.

authors to do so. Benjamin Sass changed his initial dating in the early second millennium BCE¹² to the fourteenth or thirteenth century in a later article,¹³ noting that there would otherwise be an indefensibly long historical gap between the Sinai alphabet and the earliest related Canaanite alphabetic texts (12th century onwards). The later date proposed by Sass is also the date of the cuneiform alphabet used at Ugarit (modern Ras Shamra, in Syria). The relation between this cuneiform script and the linear Canaanite alphabetic characters is as yet obscure, but the Ugarit alphabet is arguably the oldest *firmly* dated representative of the alphabetic tradition in the Near East.¹⁴ However Egyptological research is mostly in favour of the early second millennium, because sources from that period present the ideal circumstances for the use, and perhaps even for the invention of the Sinai alphabet.¹⁵

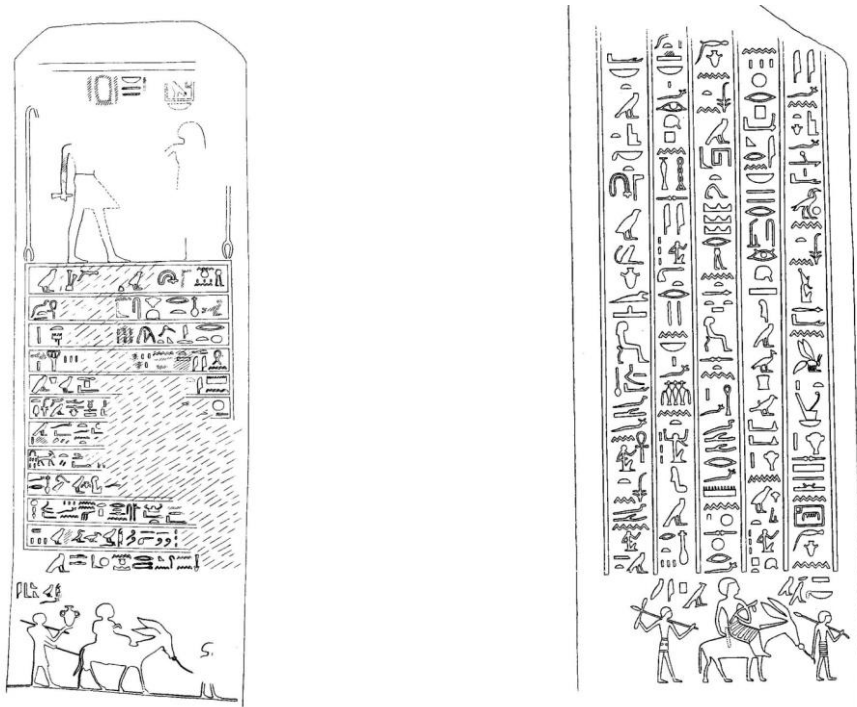


Illustration 3: Sinai stelae 112 (left) and 405 (right)¹⁶

¹² Sass, *Genesis of the Alphabet*, 139 and 144.

¹³ Benjamin Sass, "The Genesis of the Alphabet and its Development in the Second Millennium B.C. Twenty Years Later," *De Kêmi à Birît Nâri* 2 (2004/5): 147-166.

¹⁴ As opposed to the syllabic Mesopotamian cuneiform script, the Ugaritic alphabet is consonantal, with the exception of three signs expressing ' + vowel; see e.g. Wilfred van Soldt, 'The Interaction of Syllabic and Alphabetic Cuneiform Writing in Ugarit,' in *The Idea of Writing. Play and Complexity*, ed. Alex de Voogt and Irving Finkel (Leiden & Boston: Brill, 2010), 345-355. For the possible relations with linear alphabets see Manfred Dietrich and Oswald Loretz, *Die Keilalphabet. Die phönizisch-kanaanäischen und altarabischen Alphabete in Ugarit* (Münster: Ugarit-Verlag, 1988), 99-143.

¹⁵ E.g. Morenz, *Die Genese der Alphabetschrift*, 223-242.

¹⁶ From: Gardiner and Peet, *The Inscriptions of Sinai*, pl. XXXVII and LXXXV.

Among the numerous hieroglyphic stelae from the Middle Kingdom, there are several that depict or mention members of expeditions who had a non-Egyptian cultural and linguistic background (see illustration 3).¹⁷ These are shown riding donkeys, which is unusual in pharaonic iconography, and detailed depictions suggest multi-coloured dress and non-Egyptian beards and hairdressing. Together with their names and titles this suggests a cultural origin in areas to the northeast of Egypt. The date of these stelae is the late Twelfth Dynasty. The persons shown riding on donkeys and accompanied by walking men were probably important people. Among them we find a certain Khebeded or Khebededem who was a ‘brother of the (or: a) Ruler of Retjenu’.¹⁸ This person is mentioned on several stelae from the reign of Amenemhet III.¹⁹

Orly Goldwasser sees in these donkey-riders the members of an aristocratic military class of Levantine descent living in Egypt, presumably in the northeastern Nile Delta. Indeed, tombs of warriors of Levantine origin have been found in that region, more precisely at Tell el-Dab‘a, and their burial gifts include javelins and jars of the types depicted on the Sinai stelae.²⁰ During the Middle Kingdom, Egypt saw increasing numbers of Levantine immigrants, many of whom entered Egyptian service as household servants or soldiers. For these people, military careers probably opened the road to high social and political status. In the Second Intermediate Period, Tell el-Dab‘a (ancient Avaris) would become the residence of a dynasty of Levantine descent, the Hyksos, who ruled over northern Egypt. The Hyksos pharaohs presented themselves in Egyptian style, and Egyptian objects produced under their reigns bear their royal titularies in hieroglyphs and cartouches, but among the names in these titularies were Semitic ones, and their main title remained ‘Foreign Ruler’ (*heka khasut* in Egyptian, the origin of the name ‘Hyksos’ in Greek documents).

¹⁷ The stelae depicting donkey-riding individuals also include Sinai stela 115. For these depictions and their interpretation see Orly Goldwasser, “Out of the Mists of the Alphabet – Redrawing the “Brother of the Ruler of Retenu”,” *Ägypten und Levante* 22 (2012): 353-374.

¹⁸ Retjenu being an Egyptian name for the Syrian-Palestine region. It is uncertain if there was only one Ruler of Retjenu, or several of such rulers at the time.

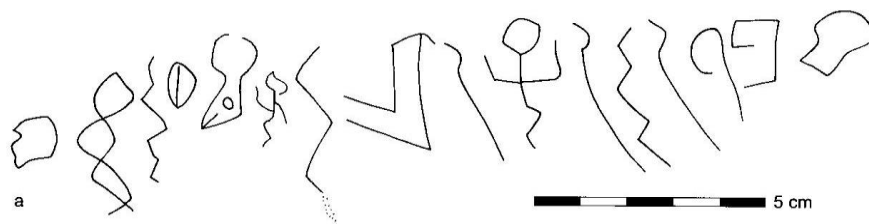
¹⁹ As already noted by Petrie, *Researches in Sinai*, 118, and Eisler, *Die kanaanitischen Weihinschriften*, 133; see now Goldwasser, “Out of the Mists of the Alphabet.”

²⁰ Goldwasser, “Out of the Mists of the Alphabet,” 368-370.

It is the presence of speakers of a Semitic language, together with Egyptians and in an Egyptian cultural environment, that presents itself as the perfect background for the appearance of Semitic alphabetic inscriptions at Serabit el-Khadim.²¹

Alphabetic inscriptions in the Wadi el-Hol

Two inscriptions in a writing very similar to the Sinai texts were discovered in 1999 in the Wadi el-Hol, in the desert to the northwest of Luxor (see illustration 4).²² The two short sequences (together showing fourteen different signs) have so far not yielded any satisfactory translation, but the characters are so similar to those of the Sinai inscriptions that they must be related.



*Illustration 4: inscription from Wadi el-Hol*²³

In the same wadi there are numerous Egyptian graffiti, their types ranging from quickly scratched cursive (hieratic) texts to monumental hieroglyphic compositions. These graffiti also testify to desert expeditions. The Wadi el-Hol is part of a network of routes in this particular part of Egypt's Western Desert enclosed by a bend in the River Nile. These routes made it possible to travel from Thebes to Diospolis Parva and Abydos further north without having to follow the meandering Nile, and were particularly useful for armies in times of conflict between Southern and Northern Egypt. Many of the Wadi el-Hol graffiti were left by

²¹ Morenz, *Die Genese der Alphabetschrift*, 266: "Vielmehr adaptierten die Kanaanäer die Schrift im 19. Jh. v. Chr., um nach ägyptischem Vorbild an der monumentalen Sakralwelt des eindrucksvollen Heiligtums von Serabit el-Chadim teilzuhaben und dabei selbst gestalterisch mitzuspielen."

²² John C. Darnell et al., "Two Early Alphabetic Inscriptions from the Wadi el-Hôl. New Evidence for the Origin of the Alphabet from the Western Desert of Egypt," *The Annual of the American Schools of Oriental Research* 59 (2005): 63-124.

²³ From: Darnell et al., "Two Early Alphabetic Inscriptions," 75, fig. 2.

passing armies, and most of them are from the Twelfth Dynasty and the following Second Intermediate Period (19th-18th centuries BCE).

It is within this time-frame that the alphabetic inscriptions were made according to their discoverers, who even narrow down the date to the late Twelfth Dynasty, and more precisely to the reign of Amenemhet III.²⁴ The reason for this precise dating is the presence, near the alphabetic graffiti, of an inscription mentioning a military troop of Levantine origin (aAm . w ‘Asiatics’) under an Egyptian commander called Bebi. The same Bebi is mentioned in other local inscriptions, one of which bears an explicit date in the reign of Amenemhet III. Here as in the case of the Sinai texts, the growing Levantine immigration in Egypt and the appearance of ‘Asiatics’ in Egyptian service during the Twelfth Dynasty are seen as the multicultural and multilingual background that was favorable to the development and use of a new alphabetic script.

One might object that the historical basis for this conclusion is thin. Principally the alphabetic inscriptions need not have been made in this period but could be earlier or later. As for the Sinai inscriptions, one might object that the Levantine military aristocrats taking part in the expeditions were commemorated on Egyptian hieroglyphic stelae, and that their status and residence in Egypt makes them less likely candidates for the production of ‘casually’ scratched alphabetic inscriptions. It has indeed been argued, also in Egyptology, that these inscriptions were made later on already existing objects, and also at mining locations that do not belong to the prime destinations of the Middle Kingdom expeditions, perhaps by people coming to Serabit el-Kadim after or between these expeditions. In this spirit, Françoise Briquel-Chatonnet proposed to date the Sinai alphabetic inscriptions in the Second Intermediate period, 17th-16th century BCE.²⁵ Some Egyptologists, starting with Petrie²⁶ have advocated an Eighteenth Dynasty date (16th century or later); this is mainly based on stylistic dating of the objects inscribed, and has been refuted by others. One important object in this

²⁴ Darnell et al., “Two Early Alphabetic Inscriptions,” 86-90.

²⁵ Françoise Briquel-Chatonnet, “Les inscriptions proto-sinaïtiques,” in *Le Sinaï durant l’Antiquité et le Moyen Age. 4000 ans d’histoire pour un désert*, ed. Dominique Valbelle and Charles Bonnet (Paris: Errance, 1998), 56-60.

²⁶ *Researches in Sinai*, 131.

discussion is the British Museum sphinx (illustration 2), which is however assigned a late Middle Kingdom date in recent Egyptological literature.²⁷

Palaeographical considerations

It is important to carefully look at the precise forms of the Sinai and Wadi el-Hol inscriptions. One reason for this, among others, is that palaeographic analysis potentially gives clues to the approximate dating of the inscriptions. On the plausible assumption that their individual signs, or at least a substantial number of them, find their origin in Egyptian characters, one can try to establish what stage of the development of the hieroglyphic script provides the most likely models for the alphabetic signs.

This is what the discoverers of the Wadi el-Hol inscriptions did, and their conclusion is that the signs in the Wadi el-Hol inscriptions were derived not only from monumental Egyptian hieroglyphs, but also from cursive Egyptian scripts, i.e. cursive hieroglyphs and hieratic.²⁸ They also found that the nearest parallels for the alphabetic characters are found in Egyptian texts of the early Middle Kingdom, which suggests that the development of the Wadi el-Hol characters may go back to that period. Combinations of monumental and cursive signs are often found in Egyptian rock inscriptions or graffiti. This hybrid character of rock inscriptions, such as found abundantly at the Wadi el-Hol, may in itself have been the basis for the graphic development of the alphabetic signs.²⁹ At the same time, one should be aware that the search for parallels in various kinds of monumental and cursive scripts opens up endless possibilities for identification and dating. More generally speaking, palaeographic dating is delicate, and at best provides one possible indication in addition to others.


Palaeographical analysis of the Sinai inscriptions has mainly been done by Gordon Hamilton and Orly Goldwasser.³⁰ The latter argues that the nearest parallels for the Sinai alphabetic

²⁷ E.g. Richard Parkinson, *Cracking Codes. The Rosetta Stone and Decipherment* (London: British Museum Press, 1999), 182: "c. 1800 BC"; *Sésostris III. Pharaon de légende*, ed. F. Morfisse and G. Andreu (Ghent: Snoeck, 2014), 285, no. 190: "vers 1872-1680 av. J.-C."

²⁸ Darnell et al., "Two Early Alphabetic Inscriptions," 76-87. Similarly for the Sinai inscriptions: Morenz, *Die Genese der Alphabetschrift*, 105-128.

²⁹ As argued by Gordon J. Hamilton, *The Origins of the West Semitic Alphabet in Egyptian Scripts* (Washington: The Catholic Biblical Association of America, 2006), 269-275.

³⁰ Hamilton, *The Origins of the West Semitic Alphabet*; Orly Goldwasser, "Canaanites Reading Hieroglyphs," *Ägypten und Levante* 16 (2006): 121-160, esp. 135-151.

characters are found in local hieroglyphic inscriptions; to be more precise, on the stelae left by the Egyptian expeditions of the Middle Kingdom. Not only the precise forms of the hieroglyphs are important here, but also their frequency. One crucial example in this connection is the sign for *h* (letter name *hê* in Biblical Hebrew), a man with his arms raised (see Illustration 1: right side, third character from left). The Egyptian model for this sign must have been the hieroglyph . This sign is used with very specific meanings in Egyptian hieroglyphic texts (mostly in words expressing joy), and therefore not a very frequent sign among the many hundreds of the hieroglyphic repertoire. In the Sinai hieroglyphic texts, however, it is particularly frequent.³¹

For many other signs it is difficult if not impossible to see a specific connection with the hieroglyphic texts at Serabit el-Khadim. The models for some of the alphabetic characters may not have been hieroglyphs, but concrete objects. Goldwasser made this suggestion for the hand (*kaph*), the corner or carpenter's square(?) (*pe*), the bow (*shin*), and even for the house (*bêt*). The model for the latter could possibly have been the typical pottery offering table in the shape of a house, rather than the house hieroglyph. All this, however, makes Goldwasser's case for the Sinai as the place of origin of the alphabet difficult to substantiate. Moreover, the presence of similar alphabetic texts in the Wadi el-Hol, in the deep south of Egypt, indicates that the use of the script was spread over a wide area by the late Middle Kingdom, the date proposed by Darnell et al. and Goldwasser. Whereas Darnell et al. propose that the script as used in both Wadi el-Hol and Sinai was developed in Egypt already in the early Middle Kingdom, Goldwasser rather argues that the script used in Wadi el-Hol is a reproduction of the Sinai alphabet.

Conclusion; origin

Despite the uncertainties and controversies outlined above, the Sinai and Wadi el-Hol inscriptions are widely considered representatives of the earliest known, or one of the earliest known consonantal alphabetic scripts. The early dating to the late Middle Kingdom (nineteenth-seventeenth centuries BCE), defended by Egyptologists, would certainly make

³¹ Goldwasser, "Canaanites Reading Hieroglyphs," 137-138; idem, "The Miners Who Invented the Alphabet," *Journal of Ancient Egyptian Interconnections* 4:3 (2012): 12, <http://jaei.library.arizona.edu>.

this script the earliest known alphabet. The much later dating proposed by Sass, fourteenth/thirteenth century, would make the script more or less contemporary with the cuneiform alphabet of Ugarit, the earliest firmly dated alphabet.

Much is still unknown about the relations between the Sinai and Wadi el-Hol inscriptions, and also between these and the other alphabetic scripts of the Ancient Near East. As for the historical origin of the alphabetic script, a strong case has been made for the turquoise-mining area of Serabit el-Khadim as offering the ideal circumstances for the development of a new script inspired by Egyptian hieroglyphs and used for the writing of a Semitic language. However the discovery of the Wadi el-Hol inscriptions has made it clear that the Sinai was not necessarily the place of origin. Even regardless of the dating of the texts at these locations, the occurrence of so very similar inscriptions separated by a huge geographical distance makes it possible that they represent a script already widely used by the time they were made.

The users, in the Sinai as well as in the Wadi el-Hol, may well have been Semitic-speaking people connected with Egyptian expeditionary forces. It is striking that in both cases the local Egyptian texts informing us about this particular situation are from the late Middle Kingdom, even more precisely from the reign of Amenemhet III. In my opinion, this makes it likely that at least some of the alphabetic inscriptions were made about this time. The symbiosis or cooperation between Egyptians and Semitic-speaking groups may also be the background of the invention of the alphabet, in the late Middle Kingdom or even earlier. The alphabetic inscriptions are perhaps not restricted to a short span of time, but may come from different stages in the development of the alphabet.³²

Unlike the Mesopotamian cuneiform script, which is dominantly syllabic, Egyptian hieroglyphic is a consonantal script, and as such more like the Semitic alphabets that appeared from the late second millennium BCE onward. Nevertheless, hieroglyphic (and the related hieratic) has hundreds of signs, among which are many that express two or three consonants together. When compared to the Egyptian script, therefore, the alphabet

³² Hamilton, *The Origins of the West Semitic Alphabet*, 289-296.

essentially represents a reduction to a small number of monoconsonantal signs.³³ However the principle of consonantal writing (so convenient for both the Egyptian and Semitic languages) was already there. The hieroglyphic script of the Old and Middle Kingdom even includes monoconsonantal signs. Although these were not separated from the rest of the hieroglyphic repertoire, when exclusive phonetic writing was needed, for instance for strange names, these were the signs that were mainly used. Therefore the contribution of the Egyptian hieroglyphic script to the development of the alphabet was perhaps not restricted simply to supplying graphic models for its characters.

Obviously much more research is needed in order to decipher the alphabetic inscriptions at Serabit el-Khadim and Wadi el-Hol, and to give them their proper place in the history of alphabetic writing. Solving the chronological controversies seems to be especially important so that we know what developments took place in the second millennium BCE, and when precisely in that millennium. Research will have to include other sources than those referred to in this brief paper, such as newly identified inscriptions and archaeological features at the relevant sites, and other ancient documents with potentially important information.³⁴ The results of this research must lead to a better appreciation of the Sinai alphabetic inscriptions and related texts, by Egyptologists and Semitists, but also by a wider circle of scholars interested in the history of writing.

³³ Twenty-one different signs are listed by Goldwasser, "Canaanites Reading Hieroglyphs," 154-155; at least twenty-two by Sass, *Genesis of the Alphabet*, [183], table 4; twenty-seven by Hamilton, *The Origins of the West Semitic Alphabet*, 29-268.

³⁴ See e.g. Stefan J. Wimmer, "A Proto-Sinaitic Inscription in Timna/Israel: New Evidence on the Emergence of the Alphabet," *Journal Of Ancient Egyptian Interconnections* 2:2 (2010): 1-12; Pierre Tallet, *La zone minière pharaonique du Sud-Sinaï – I: Catalogue complémentaire des inscriptions du Sinaï*. Cairo: Institut Français d'Archéologie Orientale, 2012, 297-327; Ludwig D. Morenz, *Das Hochplateau von Serabit el-Chadim. Landschaftsarchäologie und Kulturpoetik* (Berlin: EB-Verlag Dr. Brandt, 2014); Ben Haring, "Halaḥam on an Ostrakon of the Early New Kingdom?," *Journal of Near Eastern Studies* 74 (2015) (in press).

Bibliography

- Albright, William F. "The Proto-Sinaitic Inscriptions and their Decipherment." Cambridge, Mass.: Harvard University Press, 1966.
- Briquel-Chatonnet, Françoise. "Les inscriptions proto-sinaïtiques." in *Le Sinai durant l'Antiquité et le Moyen Age. 4000 ans d'histoire pour un désert*, ed. Dominique Valbelle and Charles Bonnet. Paris: Errance, 1998, 56-60.
- Daniels, Peter T. "The First Civilizations." in *The World's Writing Systems*, ed. Peter T. Daniels and William Bright. New York & Oxford: Oxford University Press, 1996, 21-32.
- Darnell, John C., F.W. Dobbs-Allsopp, Marylin J. Lundberg, P. Kyle McCarter, Bruce Zuckerman, and Colleen Manassa. "Two Early Alphabetic Inscriptions from the Wadi el-Ḥôl. New Evidence for the Origin of the Alphabet from the Western Desert of Egypt." *The Annual of the American Schools of Oriental Research* 59 (2005): 63-124.
- Dietrich, Manfred, and Oswald Loretz. *Die Keilalphabet. Die phönizisch-kanaanäischen und altarabischen Alphabet in Ugarit*. Münster: Ugarit-Verlag, 1988.
- Eisler, Robert. *Die kenitischen Weihinschriften der Hyksoszeit im Bergbauggebiet der Sinaihalbinsel*. Freiburg im Breisgau: Herdersche Verlagshandlung, 1919.
- Gardiner, Alan H. "The Egyptian Origin of the Semitic Alphabet." *The Journal of Egyptian Archaeology* 3 (1916): 1-16, pl. I-V.
- Gardiner, Alan H., and T. Eric Peet. *The Inscriptions of Sinai I*, 2nd edition rev. by Jaroslav Černý. London: Egypt Exploration Society, 1952.
- Goldwasser, Orly. "Canaanites Reading Hieroglyphs." *Ägypten und Levante* 16 (2006), 121-160, esp. 135-151.

- “Out of the Mists of the Alphabet – Redrawing the “Brother of the Ruler of Retenu”.” *Ägypten und Levante* 22 (2012): 353-374.
- “The Miners Who Invented the Alphabet.” *Journal of Ancient Egyptian Interconnections* 4:3 (2012): 9-22, <http://jaei.library.arizona.edu>.
- Hamilton, Gordon J. *The Origins of the West Semitic Alphabet in Egyptian Scripts*. Washington: The Catholic Biblical Association of America, 2006.
- Haring, Ben. “Halaḥam on an Ostrakon of the Early New Kingdom?.” *Journal of Near Eastern Studies* 74 (2015) (in press).
- Morenz, Ludwig D. *Die Genese der Alphabetschrift. Ein Markstein ägyptisch-kanaanäischer Kulturkontakte*. Würzburg: Ergon-Verlag, 2011.
- *Das Hochplateau von Serabit el-Chadim. Landschaftsarchäologie und Kulturpoetik*. Berlin: EB-Verlag Dr. Brandt, 2014.
- O’Connor, M. “Epigraphic Semitic Scripts.” in *The World’s Writing Systems*, ed. Peter T. Daniels and William Bright. New York & Oxford: Oxford University Press, 1996, 88-107.
- Parkinson, Richard. *Cracking Codes. The Rosetta Stone and Decipherment*. London: British Museum Press, 1999.
- Petrie, William M.F. *Researches in Sinai*. London: John Murray, 1906.
- *The Formation of the Alphabet*. London: MacMillan and Co., 1912.
- *Seventy Years in Archaeology*. London: Sampson Low, Marston & Co., 1932.
- Sass, Benjamin. *The Genesis of the Alphabet and its Development in the Second Millennium B.C.* Wiesbaden: Otto Harrassowitz, 1988.

- “The Genesis of the Alphabet and its Development in the Second Millennium B.C. Twenty Years Later.” *De Kêmi à Birît Nâri* 2 (2004/5): 147-166.

Soldt, Wilfred van. “The Interaction of Syllabic and Alphabetic Cuneiform Writing in Ugarit.” in *The Idea of Writing. Play and Complexity*, ed. Alex de Voogt and Irving Finkel. Leiden & Boston: Brill, 2010, 345-355.

Tallet, Pierre. *La zone minière pharaonique du Sud-Sinaï – I: Catalogue complémentaire des inscriptions du Sinaï*. Cairo: Institut Français d’Archéologie Orientale, 2012.

Wimmer, Stefan J. “A Proto-Sinaitic Inscription in Timna/Israel: New Evidence on the Emergence of the Alphabet.” *Journal Of Ancient Egyptian Interconnections* 2:2 (2010): 1-12.

Traditional Tourists and Modern Bedouin:
Tourism and Development in the South Sinai
Jessica Jacobs, Queen Mary University of London

Introduction

This paper examines the role of tourism and development in the lives of the local Bedouin community of south Sinai by re-visiting the author's 2006 collaborative research film [*Sinai Sun: Traditional Tourists and Modern Bedouin*](#) (34 mins). The short film funded by the Arts and Humanities Research Council (UK) was made with Dr Alexa Firat (Temple Philadelphia) and members of the Bedouin community.

The film was planned as means to explore the relationship between the tourist industry and the local Bedouin community. Over a period of six weeks we filmed in a range of locations in the south Sinai and interviewed members of the Bedouin community in addition to Egyptian and European residents. During this research phase, we found a complex and contradictory asymmetry. While the tourist industry marketing was clearly dependant on a (stereotypical) notion of Bedouin life and society it was also actively cutting them out of the wealth generated by the boom in tourism development. In addition the pressure from the tourist industry for Bedouin to maintain a romantic tourist imaginary of tradition and timelessness, contrasted heavily against the pressures most Bedouin were under to work within a modern industry like tourism.

Popular discourses claim tourism is a form of development that leads to empowerment of local communities. This belief has been particularly prevalent in the Middle East region where global organisations such as the World Bank and the International Monetary Fund tie loans to requirements that governments invest in large scale tourist projects as the key to economic development and peace.¹ This film sets out to counter this assertion. It does this without an overarching narrative voice as such but uses montage techniques (including match cuts and sound edits) and other filmmaking processes of juxtaposition to create sequences that highlight the contradictions within such claims.

¹ Waleed Hazbun, *Beaches, Ruins, Resorts: The Politics of Tourism in the Arab World* (Minneapolis: University of Minnesota Press, 2008).

Visiting the Sinai

There are many people, I believe who have concluded that the peninsula of Sinai must already have been a well-explored country, since so many travellers have visited it; but, owing to various local causes, there is probably no other country in which travellers have been led to carry out more fully their ovine propensity to follow exactly in each others' steps.

Frederick Whitmore Holland *Palestine Exploration Fund* 1869¹

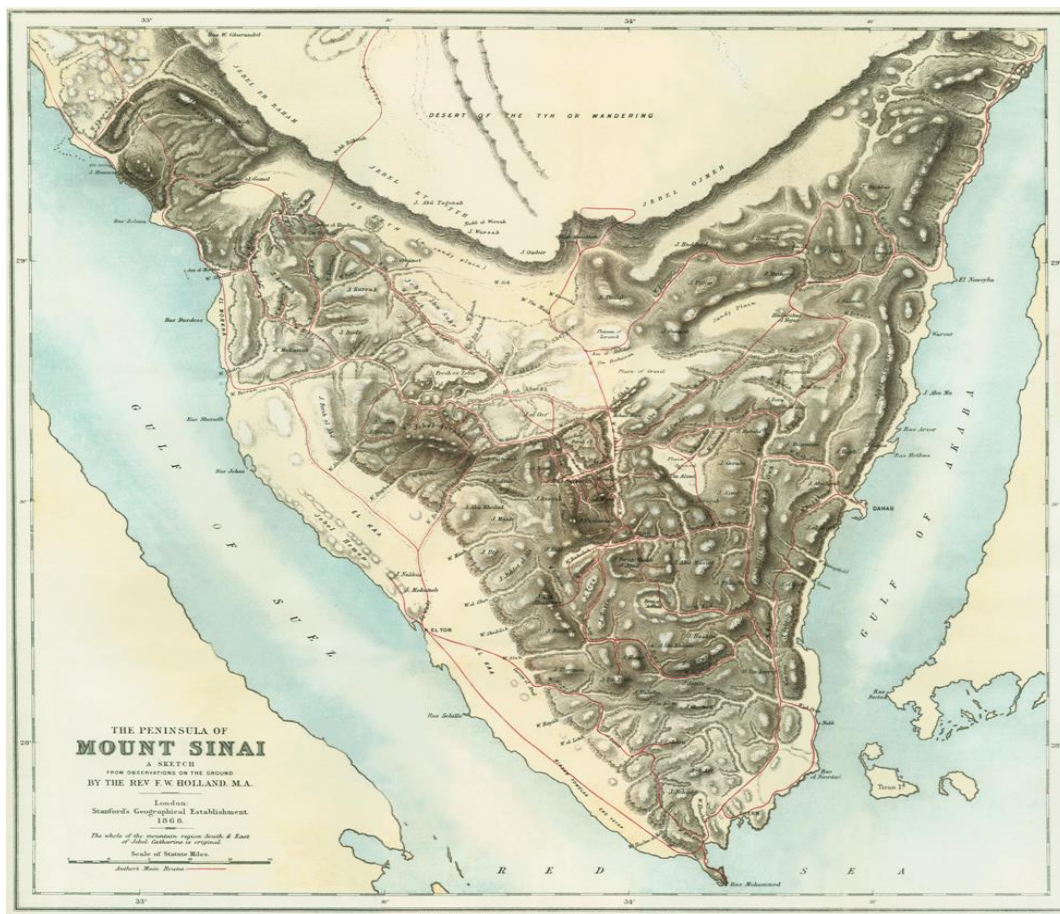


Illustration 1 A sketch map of South Sinai ²

¹ Rev. Frederick W. Holland, "Sketch Map of the Sinai [Bound with Notes on the map of the Peninsula of Sinai]," *Journal of the Royal Geographical Society* 39 (1869): 342-346.

² This map was drawn by Rev F. W. Holland in 1868 during a British expedition funded by the Palestine Exploration Fund. According to Moscrop (2000) the survey's aim to produce a 'cadastral' map was so that British interests could be protected if the need arose. The group mapped 3,000 square miles to a scale of six inches to the mile. The 'trigonometric survey' paid particular attention to Jebel Serbal and Jebel Musa, and Sinai's 'water supply, meteorology, geology, and natural history together with the inscriptions on the monuments, and to the Arab population.' (John J. Moscrop, *Measuring Jerusalem: The Palestine Exploration Fund and British Interest in the Holy Land* (London, New York: Leicester University Press, 2006), 81.) (With thanks to Dr Ahmed Shams for bringing the quote above to my attention)

[Sinai Sun \(2006\) 34 mins English/Arabic \(subtitles\)](#)

Although Bedouins have been the main inhabitants of the Sinai desert for over 200 years, the carving up of the south Sinai in the 1990s by Egypt's Tourism Development Authority effectively cut them out of the resulting economic boom fueled by tourism development along the coast.

Bedouins have long been viewed with suspicion by the Egyptian government and progressive government policies have sought to reduce their autonomy in the Sinai region. Yet at the same time they are integral to the tourist industry in the Sinai and there are very few images of the Middle East as iconic as the Bedouin nomad and his camel. This stereotypical and fixed in the past imagery is today an essential component in marketing the region and has allowed numerous visitors to access the romance and magic of the desert landscape (Jacobs 2010).

In 2005 I spent several months in the South Sinai with my colleague Alexa Firat (Temple University, Philadelphia) to work on a collaborative film with the local Bedouin (Mzeina and Alegat) in order to explore further how this community managed the tensions between demands on them to maintain a tradition of timelessness, yet also work within a modern tourist industry.

Background

This film follows two Bedouin men who work in the two main tourist areas of the Sinai – Sharm El Sheikh and Dahab.

Hussein Abu Ahmed, 37, from the Mzeina tribe is self-employed as a safari tour guide and building contractor in the main tourist centre of Sharm El Sheikh (and its surrounds). He was born in Wadi Kid, a small Bedouin community (all one family) in the desert about 50km from Sharm El Sheikh but now lives with his family in El Tur (the administrative capital of Sinai and a Bedouin urban centre) about 100 km up the coast from Sharm El Sheikh. Hussein is married with six children (his wife was not involved because she had just given birth) Hussein Abu Ahmed is the focus of the film and it is his life that is being presented. He has

been a friend of both Jessica Jacobs and Alexa Firat for many years. Hussein was very much involved in the direction of the film often he decided what and where and who to film.

Said Kader, 35 is Alegat Bedouin, whose family are based in Serabit El Khadem and Ras Sudr on the west coast. Although, like Hussein, Said grew up in the interior, he travelled frequently with his father and later moved to the tourist-Bedouin community of Asilah in Dahab. He learnt to dive there and after managing Club Red Divers he now runs his own diving centre and desert safari company [Desert Divers](#) with his Canadian wife Tanis Newman. They have three children. Said and Hussein know each other but their lives rarely overlap.

The film contains a series of different tourist-Bedouin encounters and explores the nature of this relationship through the silences and conversations. It contains interviews with other Bedouin men (friends of Hussein and Said), a Bedouin family and two more recent (migrant) residents of Sinai (one from Germany, and one from Cairo).

Gender Issues

While the two main researchers were women, most of the participants in this film are men:

1. This film focuses on the tourist-local encounter and most Bedouin adults who work in/with tourism are men (see Jacobs 2010 and 2009 for a discussion of the gendering of public/tourist space in the Sinai).
2. This film want to avoid (voyeuristic) interest in ‘veiled’ Bedouin women, and its associations with Orientalist approaches to Bedouin tribal societies.
3. Practical considerations. Hussein’s wife for example would have been in the film but had just had a baby. A series of interviews with Bedouin girls was edited out when we cut the film to 34 minutes.

Tourist Encounters



Illustration 2 Mount Sinai and Wadi Kid (Sinai Sun Dir. Jessica Jacobs 2006)

The film begins at the top of Jebel Musa/Mount Sinai at dawn where many tourists are beginning their descent after spending a few hours (or the whole night) at the summit. Two tour guides stand just below the summit call out the names of the Italian tour companies they work for to the descending crowds, ‘Franco Rosso’ and ‘Alpitour’.

Jebel Musa /Mount Sinai (2,285m or 7,497 ft) is the most frequently visited site in the South Sinai. The most common journey – a form of ‘following in the footsteps of Moses’, involves a coach ride of approximately 2-4 hours from a coastal hotel resort, followed by a 2-3 hour climb often at night to avoid the heat. After the tourists descend they often stop to visit St. Catherine’s monastery built on the site believed to be where Moses saw the burning bush. Although there is much to do and visit in the region and a range of accommodation on offer, most visitors then return directly to their hotel resorts in pre-booked coaches.

As the tourists make their way back down the mountain, a young Bedouin boy attempts to sell them ‘quartz’ (local rocks that have been collected by children and then split in two to reveal their silicon quartz interior). He is mostly ignored. The next scene introduces us to Hussein Abu Ahmed (Mzeina). He lives in El Tur now with his wife and children and works

in Sharm El Sheikh but we meet him for the first time in Wadi Kid, the place where he grew up. There is a well and gardens and we stop for tea with a relative. The conversation turns to water (or rather the lack of it). Water becomes an important topic that gets picked up throughout the film.

Hussein then drives us to Wadi Feiran, a major Bedouin oasis settlement of gardens and farms in the centre of Sinai. It is market day and a passing Bedouin tells us how the place has changed. We meet Hussein's friend Jebeli B'harbi who is visiting his mother and sister. They tell us about their lives before they moved into concrete buildings with electricity and telephone lines. A neighbour shows us how they used to grind wheat with a stone for bread. Sinai used to be famous for having the best quality grinding stones we are told.

Subtitles

The interviews with participants were in both English and Arabic. One comment in particular did cause some discussion when it came to translating. According to Hussein Jebeli's sister told us 'We are all civilised now'. However the word she uses also means 'built up' or 'urban' in reference to a cityscape. Or even a place with lots of restaurants.

It was (and is) usually a woman's job to look after the goat and sheep herds taking them every day to pasture and bringing them back in the evening. Jebeli's sister mentions how her 'modern' life means she doesn't have to 'Walk in the sun' or 'on the mountains' any more. The film uses a match cut to highlight the contrast in the Bedouin women's connection to walking in the sun as hard labour, to the tourist's association of being in the sun as a symbol and practice of leisure.

Our next stop is Dahab, a former Bedouin fishing village and this is the first time we get to see the coast. The checkpoint at the junction from the main road is decorated with a colourful mural depicting the main (tourist) attractions of the town - the desert and sea, the coral reefs and the Bedouin natives. Right in the middle of this mural we see Hosni Mubarak's (this part was removed in 2011 and later replaced with an Egyptian flag). Our first interview here is with Ralph – an ex-pat manager of the German bakery.



Illustration 3 Dahab (Sinai Sun Dir. Jessica Jacobs 2006)

Rather confusingly Ralph refers to the German community of Dahab as ‘locals’ and we use that comment to highlight the question of who is local, with match cut to a photograph of what looks at first like a Bedouin woman, but is then revealed to be a German woman in a bikini who has put on the veil. This photograph can be found at Said’s diving centre Desert Divers – and we meet him for the first time sitting at a computer in the centre office with his wife Tanis. Outside some evidence of more tourist-local encounters – this time it is a white male tourist dressing up as a ‘Bedouin’ in a traditional ‘galabeya’. A young white woman walks hand in hand with a young Bedouin man, and we see a young white man play fighting with a young Egyptian restaurant worker. The Egyptian government has paved the seafront and decorated it with lighting that resembles antique style gas lamps. The next interview is with another ex-pat of sorts, although he has only come from Cairo. Like many of Dahab’s European residents, Ahmed ‘Bamboo’ came to Dahab to escape from a stressful city life. He has a small shop selling bamboo furniture and tells us that Dahab is ‘paradise’.



*Illustration 4 Wadi Gnei signs, tourist police and Sheikh Ali
(Sinai Sun Dir. Jessica Jacobs 2006)*

We meet Said and Ahmed again in Wadi Gnei, a popular nearby diving site with a few cafes and camps with names that reveal their aspirations (Bay Watch, Happy Life). Some tourist divers have just finished their dive and are getting changed in the wind. Two members of the tourist police walk by. They have just been questioning Ahmed Bamboo and Said because they are sitting with foreign tourists. Ahmed is upset about this. He says it should be the job of the state to take care of its citizens, to help them; not harass them and treat them as potential criminals.

Sheikh Ali is one of the most well known Bedouins in Dahab. We sit in his ‘mag’ad’ (sitting area) while he shows us how Bedouins used to make coffee on the fire. Today most Bedouins tend to drink more tea than coffee. Said and Sheikh Ali discuss some local politics. Said’s daughter is playing in the background and Said tells her to be quiet but Sheikh Ali says not to worry and starts to sing her a song. The film uses a sound edit to connect us to the next scene. We can still hear Sheikh Ali singing but we are looking at trucks lumbering through the desert to deposit waste at Sharm El Sheikh’s landfill site (a few kilometres from the resort).



Illustration 5 Tour buses for Bedouin tea, signage and landfill grazing for goats (Sinai Sun Dir. Jessica Jacobs 2006)

The Western ideal of a desert as an untouched wilderness peopled by native Bedouin contrasts sharply with the rubbish that we now see strewn all over the landscape. Hussein's sister lives here with her husband and we can see her goats and camels eating the rubbish. We are unable to get close enough to see but Bedouin women are working in the landfill, collecting organic waste that can be sold as animal feed (at about US\$5 a bag). The work is hazardous to say the least. The scene is a filmic visualisation of the contradiction between how a tourist industry sells beautiful landscapes at the same time as it destroys the very same landscape.

We are back in Hussein's pick-up. A road sign tells us we are in Sharm El Sheikh. We drive past acres of tourism development, some finished and some yet to be built. We stop at Nabq, a stretch of coast where development is prohibited thanks to a Protectorate status. Hussein and his friend Sulieman drink tea in the sole café – at the edge of a Bedouin village. A sign warns of landmines, left by the Israeli army when they vacated the area in 1982.



Illustration 6 Dressing as a Bedouin in Nabq (Sinai Sun Dir. Jessica Jacobs 2006)

Hussein and Suleiman watch a tour group about to leave on their quadrunners. An Egyptian tour guide wraps a tourist's head in a Bedouin-style keffiyeh. We watch them leave and then follow them. When they get to 'Split Rock' the guide signals for them to stop. Here they are offered Bedouin tea and can buy Bedouin 'handicrafts'. A camel ride follows. While we are filming, we are stopped and questioned by the Egyptian security officer who is travelling with the tour bus. We arouse suspicion not just because we are filming but because we are foreigners travelling with Bedouins – without any Egyptians. We leave and Hussein drives us to his camp in the desert. As night falls Hussein cooks the dinner on an open fire, tells us about his camp and discusses the rising price of food.

The next day we are in the Pigeon House, the only Bedouin-run hotel in Sharm El Sheikh, in Na'ama Bay. [Shark's Bay near the airport is also run by a Bedouin Mbarak]. The Pigeon House is a budget hotel with basic facilities and some huts where travellers can meet and arrange safari trips into the interior. However today it is due to be demolished to make way for a standard style hotel. The owner's son Yunis Salem explains that it is no longer possible for Bedouins to deal directly with visitors. Everything now has to be arranged via Egyptian or foreign tour operators. He shows us the new rooms.

Next we drive along the back road of Sharm El Sheikh and see workers building a low wall along its length. This wall is designed to prevent anyone driving into the city directly from

the desert. Instead all traffic will have to pass by the army and police checkpoints. Bedouins are now on one side, tourists and Egyptians on the other.



*Illustration 7 Concrete construction and security walls
(Sinai Sun Dir. Jessica Jacobs 2006)*

When we reach another remnant of Bedouin life - Shark's Bay – the sound of construction is overwhelming. Surrounded by luxury hotels, Mbarak is planning an upgrade of his facilities. We meet Salem a young Bedouin friend of Hussein who works at Shark's Bay. He reflects on his life with tourist, including an Italian girlfriend. Hussein tells us why he likes to come to Shark's Bay but admits he doesn't think it is a suitable place to bring his family to. This last comment allows us to cut to a scene of Hussein's family. They live in El Tur, home to a large Bedouin community and the administrative centre of south Sinai. Hussein tells us why he lives in El Tur because it has schools and other facilities including reliable access to water. Sharm, he says, has no water.

Once more an opportunity to cut back to the Sharm El Sheikh, this time the juxtaposition is from a spoken word (water) to an image of huge, sprawling swimming pools and beach scenes. The film uses music (played to tourists while they are on holiday) as a sound edit to take us to a beach bar called Terrazzina where the young Egyptian beach staff are cleaning the sand of cigarette butts in time to the music.



*Illustration 8 Sharm El Sheikh has no natural source of fresh water
(Sinai Sun Dir. Jessica Jacobs 2006)*

As the music changes to a call for prayer we start to move to the nearby downtown Old Market – only about 10 years old but built to resemble an ancient Oriental bazaar. We see a young boy and tourist merchandise on sale – sheeshas, spices, t-shirts. As we drive by the music changes to Egyptian pop, and we head out onto the road down to Na’ama Bay. Night falls again and we cut to a Bedouin wedding in the desert featuring rhythmic clapping. A match cut takes us back to Na’ama Bay, where we see a different kind of nightlife. Here tourists are dressed up and walk up and down the main strip against a backdrop of chain bars, clubs and restaurants: Hard Rock Café, KFC, Pizza Hut. A sign outside Pacha tells us it is ‘Sintillate’ night and announces a Russian beauty contest.



*Figure 9 Different nightlife in the desert interior and the resort of Na'ama Bay
(Sinai Sun Dir. Jessica Jacobs 2006)*

We find Hussein at the nearby Camel Bar – no camels in sight but lots of diving centre staff and tourists. Hussein is having a beer with his friend Karam. He tells us about his childhood memories of the empty beach where Na'ama Bay is now. And how he learnt English from the tourists there. Hussein has taken us all over the Sinai. Like the tourists, he likes to move. The final scene of the film is Hussein back in Wadi Kid, drinking tea. In the background his relative Mardi Hamdat sings and plays the rebab.

Conclusion

The film *Sinai Sun* attempted to capture a time when Sinai was in transition. The Bedouin culture that had so much to do with kickstarting the early backpacker tourism in Dahab during the 1970s, was beginning to be seen as an impediment to the large hotel and resorts development projects Sharm El Sheikh. Increasingly Bedouins were seen as a threat to this tourism development.

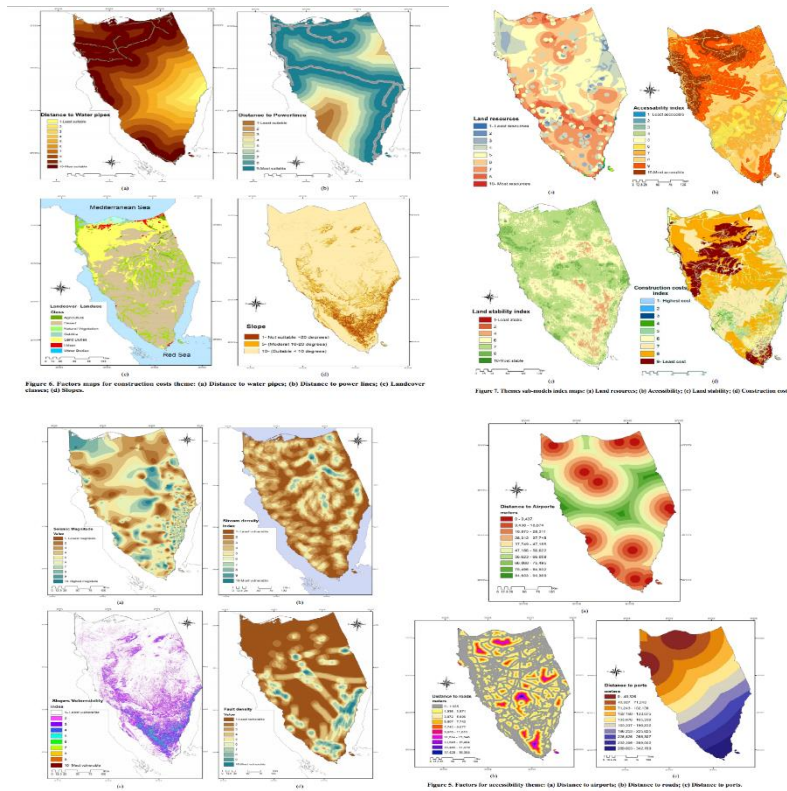


Figure 11 Today tourism is still popular in the Sinai. However there is now added pressure to increase urban development in the Sinai, and increase opportunities to exploit its natural resources are gaining ground. (Effat and Hegazy 2013)

At the same time, attempts were made to ameliorate the exclusion of Bedouins from the wealth being created along the coasts of the Sinai. During and just after this film was made discourses on sustainable tourism were very popular in development circles. Europeaid funded a major report to develop a South Sinai Sustainable Tourism Development Plan for 2007-2017 to run alongside the European Union funded South Sinai Regional Development Programme (2006-2010). These programmes had limited (if any) success and for the most part have been indefinitely shelved. Today the pressure is on the peninsula to provide mineral resources and sites for urban development for a growing Egyptian population. Local community initiatives such as Sinai Reef Environment and Community Development, Sharm Waste Management Project and other groups based in Dahab, are growing in response to increasing pressure on the fragile environment and culture of South Sinai. The film *Sinai Sun* was made as a means to understand a process of tourism that was prevalent in the region at that time. Looking back at that period can be a very useful tool for understanding the challenges that are facing the region today.



*Figure 10 Hussein Abu Ahmed at home in Wadi Kid
(Sinai Sun Dir. Jessica Jacobs 2006)*

Dr. Jessica Jacobs (Queen Mary University of London) is a geographer who uses film as a form of research method and publication. Her work focuses on East-West relationships as they are played out in the tourist landscapes of Egypt, Jordan and Syria. Her research films include [*Sinai Sun* \(2006\)](#) and [*Visualising the Past: Rebranding the Present I, II, III & IV* \(2010\)](#)

Credits

Director Jessica Jacobs in collaboration with Alexa Firat and Hussein Abu Ahmed

Camera/Sound Jessica Jacobs and Alexa Firat

Additional Camera/Sound Hussein Abu Ahmed, Jebeli B'Harbi

Editor Napoleon Stratogiannakis (NFTS)

Sound Editor Kieron Teather (NFTS)

Grading and Effects, Additional Editing Ben Scott

Assistant Editor Sky Neal

Translation Alexa Firat and Hassan Nitami

Music Remix – Edmund Cavill and Sherif El Dardiry

Bedouin music – Sheikh Ali, Mardi Hamdat

Bibliography

Effat, Hala A. and Mohamed Hegazy. "A Multidisciplinary Approach to Mapping Potential Urban Development Zones in Sinai Peninsula, Egypt Using Remote Sensing and GIS." *Journal of Geographic Information System* 5 (2013): 567-583.
doi: [10.4236/jgis.2013.56054](https://doi.org/10.4236/jgis.2013.56054).

Moscrop, John J. *Measuring Jerusalem: The Palestine Exploration Fund and British Interest in the Holy Land*. London, New York: Leicester University Press, 2006.

Hazbun, Waleed. *Beaches, Ruins, Resorts: The Politics of Tourism in the Arab World*. Minneapolis: University of Minnesota Press, 2008.

Holland, Rev. Frederick W. "Sketch Map of the Sinai [Bound with Notes on the map of the Peninsula of Sinai]." *Journal of the Royal Geographical Society* 39 (1869): 342-346.

Jacobs, Jessica. "Sinai Sun: Traditional Tourists and Modern Bedouin." 34.06 DVD 2006
Posted online March 26, 2011 <https://vimeo.com/21521292>

Jacobs, Jessica. "Have sex will travel: romantic sex tourism and women negotiating modernity in the Sinai." *Gender, Place and Culture* 16 (2009): 43-61.

Jacobs, Jessica. *Sex tourism and the postcolonial encounter Landscapes of Longing in Egypt*. London New York: Ashgate, 2013.

The Library of Sinai: A Treasure for Sharing
Hieromonk Justin
Saint Catherine's Monastery, Sinai, Egypt

Introduction

The Sinai monastery can trace a continuous history extending back over seventeen centuries. In this course of time, an important library has been formed, containing over 3300 manuscripts in eleven languages. The library also contains a collection of 1000 scrolls in Arabic, and 800 scrolls in Turkish. In an effort to preserve the fragile original documents, and at the same time, make them more accessible, the monastery has initiated programs to photograph the manuscripts with high resolution digital cameras, to recover the faint underlying texts of palimpsests with multi-spectral imaging, and to take sequential photographs of scrolls and then stitch the images together, producing a single photograph that yet shows every detail of the original.

The Sinai Monastery can trace a history extending back in time to the late third and early fourth century, when monks came to this remote wilderness to devote their lives to prayer and fasting. But Sinai was more than a stark desert. It was the place where God had revealed himself to the prophet Moses, first at the bush that burned with fire yet remained unconsumed, and then at the peak of Sinai. These first Christian hermits wanted to live at the very place where God had said to Moses, 'the place whereon thou standest is holy ground' (Exodus 3:5).

Soon after, this desert also became the goal of pilgrims, who made their way to Jerusalem, and if they had the time, the means, and the stamina, would continue on to Sinai. When Egeria and her fellow pilgrims visited the area around the year 383, they witnessed a flourishing monastic life, and were even then following an established pilgrim route. The monks read to them passages of scripture concerning the sacred events that had taken place there, and celebrated the Liturgy for them. This is an indirect witness to the presence at Sinai of manuscripts of the scriptures, and of the services, in the fourth century. To these would have been added the sayings of collected wisdom born from experience, the *Apophthegmata*, the Sayings of the Desert Fathers. In this way, the Sinai library had its beginnings.

The library now contains some 3300 manuscripts in the Old Collection, to which must be added the manuscripts known as the New Finds. These are of the greatest importance both for their antiquity and for the significance of the texts that they preserve. If we look at specific examples of these manuscripts, they can tell us much about the monks who lived at Sinai, and the pilgrims who came here, over the centuries, from both East and West.

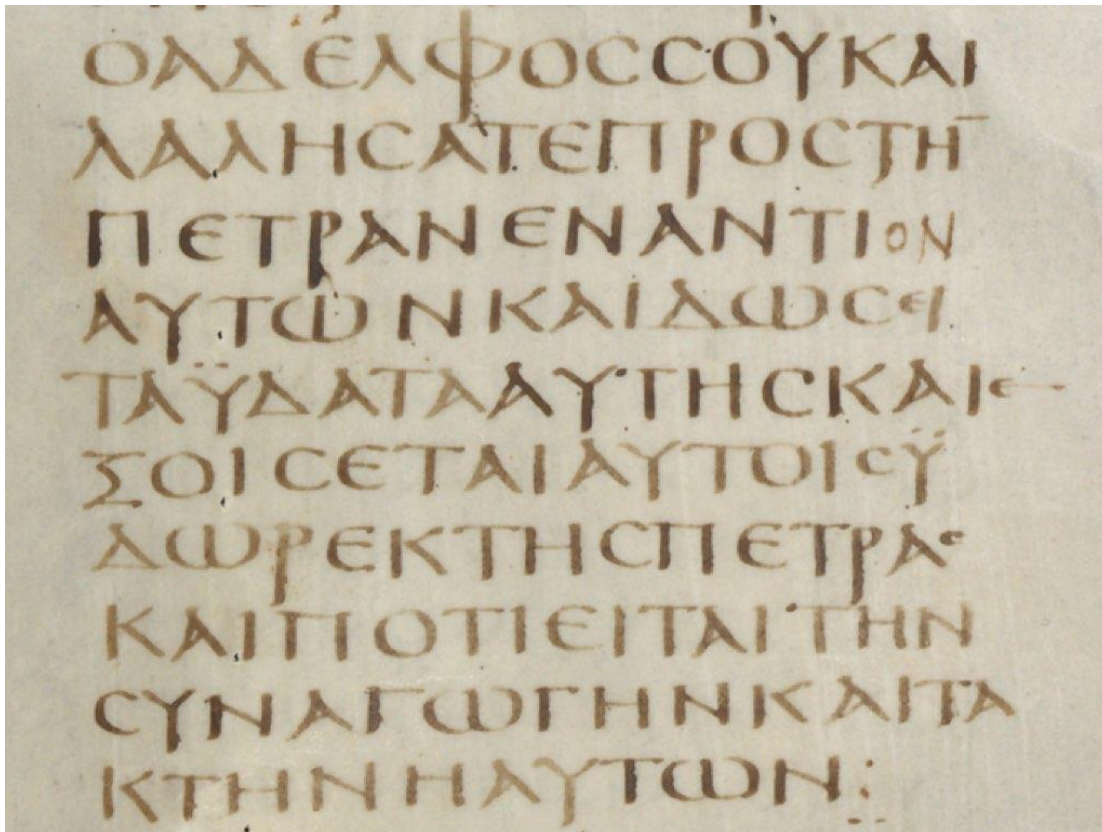


Illustration 1. The Codex Sinaiticus, Numbers 20:8

We may begin with the Codex Sinaiticus, which dates from the first half of the fourth century, that is, the lifetime of the Emperor Constantine. The manuscript contained the whole of the Christian scriptures, from Genesis to the Book of Revelation. It also included the Shepherd of Hermas, and the Epistle of Barnabas, all bound into one massive volume. It is a very beautiful and impressive manuscript. Of course, scholars esteem it today not for the beauty of its production, but because they feel it preserves an early level of the text. Students of the Greek New Testament, and of the Septuagint, the Old Testament translated into Greek, will spend much time studying the text of this manuscript, and of the Codex Vaticanus, which also dates from the early fourth century. Fenton John Anthony Hort, the great New Testament scholar of the nineteenth century, has written that if one studies the coincidences of

characteristic readings of these two manuscripts, one can recover the common archetype from which both derive, ‘the date of which cannot be later than the early part of the second century, and may well be yet earlier’.¹

Although this manuscript would have reached Sinai at a later time, it is a reminder that, from the fourth century, Sinai was an extension of the Holy Land, the far reaches of the Holy Land. As such, it was also a part of the Greek speaking world. When the Emperor Justinian, in the middle of the sixth century, commanded that a great basilica and high surrounding walls be built at the site of the Burning Bush, Sinai was yet within the perimeter of the Byzantine empire, or the Roman empire, as they would still have called it.

In the early seventh century, Syria, Palestine, and Egypt came under Arab rule. We know least about the history of Sinai in the centuries immediately following. But there is evidence that pilgrimage to Sinai was not halted by the conquest of the peninsula.² And monks continued to come to this remote desert, attracted by its austerity, its Biblical associations, and its reputation as an established centre of monasticism. In fact, Greek letters flourished in Palestine in the seventh and eighth centuries, with the contributions made by Saint John of Damascus, Andrew the Jerusalemite (who became bishop of Crete), Cosmas of Maiuma, Stephen the Sabaite, George the Syncellus, Michael the Syncellus, and Theodore and Theophanes the Grapti.³

This is reflected in the Sinai library, which contains numerous Greek manuscripts dating from the seventh to the tenth century. Number 212 is a Lectionary from the seventh century. New Finds Majuscule 5 and 56, dating from the eighth or ninth century, is a *Tropologion*, giving hymns and odes for feast days. These are the oldest surviving manuscripts containing the canons composed in iambic verse attributed to Saint John of Damascus.⁴ New Finds 26, dated to the ninth or tenth century, is a school text of the *Iliad*, giving lines of the poem, alternating

¹ Brooke Foss Westcott and Fenton John Anthony Hort, *The New Testament in the Original Greek, Introduction and Appendix* (Cambridge: Macmillan and Co., 1881), 223.

² Leslie Brubaker and John Haldon, *Byzantium in the Iconoclast Era c. 680-850: A History* (Cambridge: Cambridge University Press, 2011), 320.

³ Cyril Mango, “Greek Culture in Palestine after the Arab Conquest,” Guglielmo Cavallo, Giuseppe de Gregorio, and Marilena Maniaki, editors, *Scritture, Libri e Testi Nelle Aree Provinciali di Bisanzio*, vol. 1 (Spoleto: Centro Italiano di Studi Sull’Alto Medioevo, 1991), 149-150.

⁴ Demetrios Skrekas, “Hymnographia Iambica: In Quest of Author and Audience,” *Proceedings of the Twenty-first International Congress of Byzantine Studies*, vol. 3 (London: Ashgate, 2006), 151.

with notes on vocabulary and grammar. All of these manuscripts speak of continuity at Sinai after the seventh century, as Greek remained the language of converse, study, and prayer.

A few of the Sinai manuscripts are splendid works of art, with gilded letters and brilliant illuminations, created in Constantinople in the tenth, eleventh, and twelfth centuries, when the City was at its height as the centre of culture and devotion. One of the great treasures of the Sinai library is the Codex Theodosianus, a tenth century Lectionary created in the imperial scriptoria of Constantinople. It has seven illuminations at the beginning of the manuscript, depicting Christ, the Virgin Mary, the four Evangelists, and Hosios Petros of Monovata. The manuscript was commissioned out of veneration for this saint. It contains seventy-one readings of the Gospel for the most important feast days. Every letter on every page was executed in gold leaf. The letters flash and gleam as the pages are turned.

But no less significant are the humble manuscripts written at Sinai, often on reused parchment, bound between rough boards, the pages stained from long use, a witness to the deprivations and austerity of Sinai, and to the generations of monks who have maintained the life of devotion and the cycle of daily services at this holy place.

If Greek is the centre for any consideration of the Sinai manuscripts, what do we find when we look East?

Sinai has several manuscripts written in Christian Palestinian Aramaic. This is a type of Western Aramaic, and thus is close to the dialect that would have been spoken by Jesus and his disciples, and the first Aramaic speaking Christians.

There are a number of Aramaic words and phrases preserved as such in the Greek New Testament. Καὶ κρατήσας τῆς χειρὸς τοῦ παιδίου, λέγει αὐτῇ· Ταλιθά, κοῦμι· ὃ ἐστι μεθερμηνευόμενον· τὸ κοράσιον, σοὶ λέγω, ἔγειραι. ‘And he took the damsel by the hand, and said unto her, Talitha cumi; which is, being interpreted, Damsel, I say unto thee, arise’ (Mark 5:41). In Saint Paul’s First Epistle to the Corinthians, he quotes the Aramaic word *Maranatha*, which means ‘Come, O Lord,’ or, ‘Our Lord is come’ (I Corinthians 16:22), a prayer that must have been familiar to them, and which goes back to the first Aramaic speaking Christians.

One of the most beautiful of the Sinai manuscripts written in Christian Palestinian Aramaic is a Lectionary dating from the thirteenth century.



Illustration 2. Sinai Syriac 41, a Lectionary written in Christian Palestinian Aramaic

Classical Syriac was the language spoken in upper Mesopotamia. In the Late Antique world, Syriac-speaking villages stretched from the Mediterranean to the foothills of the Zagros, and from Antioch to Ctesiphon, the Persian capital. Many important works of Greek philosophy, literature, and medicine were translated into Syriac. In addition, many works of Christian poetry and exegesis were composed in Syriac. The Sinai library has over 250 manuscripts in Syriac. They are an invaluable resource for the study of the scriptures, the services, and patristic texts.

The writings of Dionysius the Areopagite consist of four treatises and ten letters. They were translated into Syriac by Sergius of Reshaina, who died in 536. The oldest surviving manuscript in the world of the works of Dionysius the Areopagite is Sinai Syriac 52, a manuscript of the sixth century, that is, the very century in which these works were first translated into Syriac.

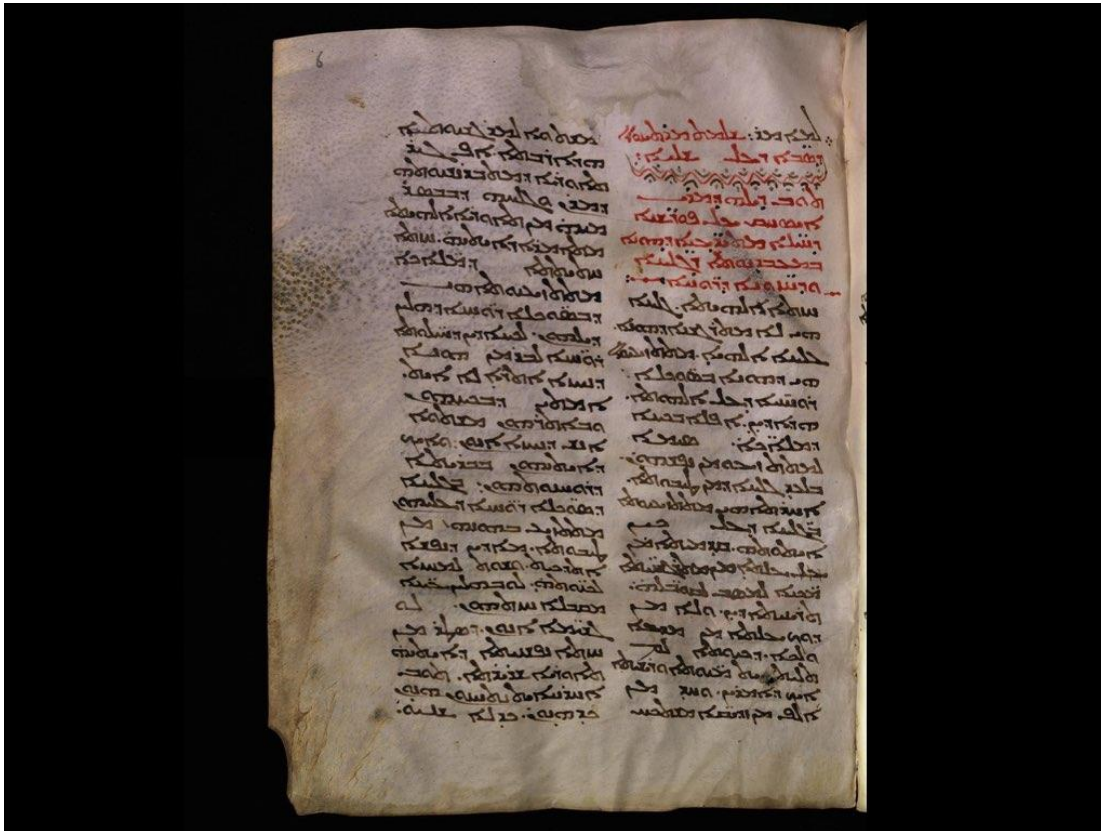


Illustration 3. Sinai Syriac 52, containing the works of Dionysius the Areopagite

Syria, Palestine, and Egypt came under Arab rule in the early seventh century. By the eighth century, Christians were expressing themselves in Arabic, and finding their place in Arabic culture. It was then that many works were translated from Syriac into Arabic, or, more rarely, directly from the Greek. In this way, important texts were passed from the world of classical antiquity to the emerging Arabic speaking world.

The oldest scribal signature in the Sinai library is found in Greek 32, an eighth century manuscript of the Psalms and Odes, concluding with the Beatitudes. Having written the entire manuscript in a heavy majuscule Greek, the scribe added his own name in Arabic. He wrote, ‘May God help you, my brother, and give you understanding. Remember me, my brother, for the sake of God’, and below, ‘The Psalter has been written in the place of God, Mount Sinai, by the sinner Michael, the disciple of Abba Philotheus’.

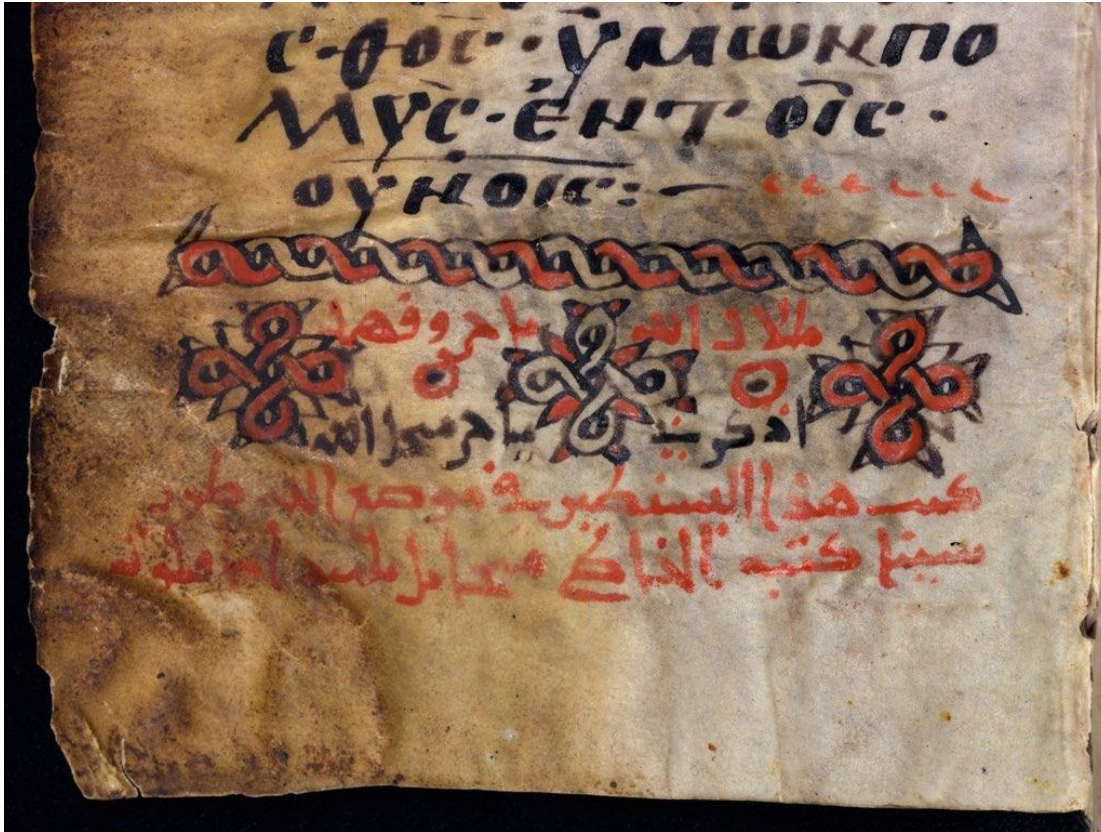


Illustration 4. Sinai Greek 32, written at Sinai, with the scribal signature in Arabic

The oldest Arabic manuscripts at Sinai are dated to the latter half of the eighth century, or the beginning of the ninth, based on their orthography.⁵ By the middle of the ninth century, we have dated manuscripts. New Finds 14 and 16, a manuscript of the Gospels, bears the date 859. Arabic 151 is a manuscript of the Epistles of Saint Paul and the Acts of the Apostles. The colophon states that it was translated in Damascus, and written in the year 867.⁶

⁵ Hikmat Kachouh, "Sinai Ar. N F Parchment 8 and 28: Its Contribution to Textual Criticism of the Gospel of Luke," *Novum Testamentum*, 50 (2008): 30.

⁶ Sidney H Griffith, "Arab Christians," *Byzantium and Islam: Age of Transition (Seventh to Ninth Century)*, Helen C Evans with Brandie Ratliff, eds. (New York: The Metropolitan Museum of Art, 2012), 60.



Illustration 5. Sinai Arabic New Finds 14 and 16, the Gospels in Arabic, dated 859

Where the Greek manuscripts speak of continuity, these speak of change, as Christians adopted Arabic as their native language, and found their place within the world of Islam. This same time witnessed the translation of the scriptures and other important texts into Arabic, and the beginnings of Arabic as an instinctive language for Christian expression and discourse.

There is evidence for Georgian monks at Sinai as early as the sixth century, but this reached a zenith in the ninth and tenth centuries. Georgian scribes copied out manuscripts of the scriptures, lectionaries, and other liturgical books, as well as lives of the saints, homilies, and ascetical writings. Some of these were important translations made at Sinai. There are 86 Georgian manuscripts in the Old Collection. It is an important witness to monks from Georgia living at Sinai, translating texts, and creating manuscript copies.

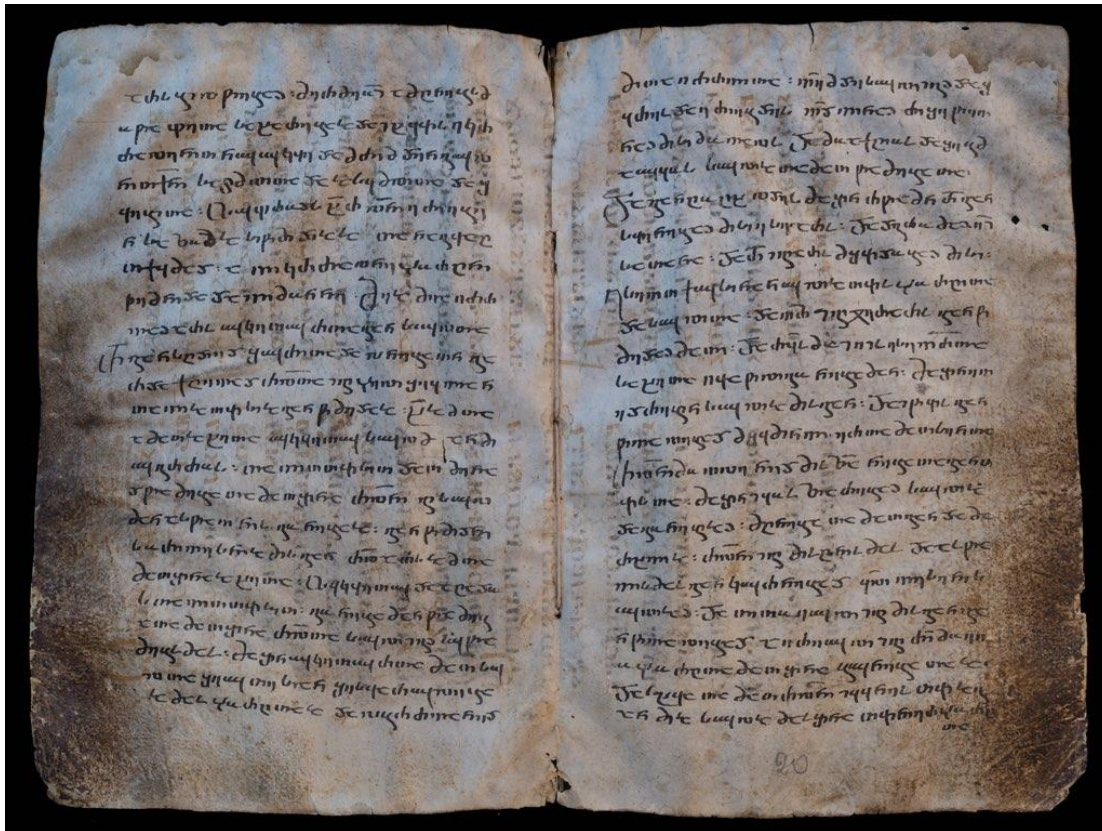


Illustration 6. Sinai Georgian New Finds 13

Sinai Georgian New Finds 13 is a manuscript with various ascetical and hagiographical texts, written by a scribe named Mikael in the tenth or eleventh century. The manuscript is a palimpsest, where the original writing was erased, and the valuable parchment used a second time. In 1996, Zaza Aleksidze, Director of the Centre of Manuscripts, in Tbilisi, Georgia, began the study of two Georgian palimpsests at Sinai. In 2001, he identified the underlying text as Caucasian Albanian, an ancient language once spoken in the Caucasus to the east of Georgia. This language had only survived in a few inscriptions carved on stone, and in one Armenian manuscript that listed the letters of the alphabet.⁷ Sinai thus possesses the unique surviving manuscripts written in this language.

Sinai has a collection of forty-two Slavic manuscripts. The oldest are written in Glagolitic, the script developed by Saints Cyril and Methodius in the ninth century, to facilitate the introduction of Christianity to the Slavic speaking world.

⁷ J. Gippert, W. Schulze, Z. Aleksidze, J.-P. Mahé (eds.), *The Caucasian Albanian Palimpsests of Mount Sinai*, Monumenta Palaeographica Medii Aevi: Series Ibero-Caucasica (Turnhout, Belgium: Brepols Publishers, 2008).

Sinai Slavic New Finds 1 is an Euchologion written in the eleventh century. The writing is skilfully executed, with colors added in red, green, yellow, azure, and black. The Glagolitic manuscripts at Sinai are evidence that pilgrims came from the Slavic lands soon after their conversion. They are essential for a reconstruction of the earliest Slavic liturgical texts.



Illustration 7. Sinai Slavic New Finds 1

These are the manuscripts of the Sinai library if we look East. What do we find if we look West?

Although there is evidence of communication between Sinai and the Latin West, both before and after the coming of Arab rule, it is surprising that the Old Collection has only one Latin manuscript. It contains the psalms (missing several quires), a calendar of selected saints, a list of the apostles and the places where they preached, a list of the liberal arts, and the Passion of Saints Peter and Paul. A number of aspects of the orthography, punctuation, and contractions are otherwise unknown in Latin manuscripts. But they would be natural to one versed in Greek and Syriac scribal practices.⁸

⁸ E. A. Lowe, 'An Unknown Latin Psalter on Mount Sinai', *Scriptorium*, vol. ix (1955):177-199.



Illustration 8. Sinai Latin Psalter, tenth century

The history and provenance of such a manuscript becomes more clear if we compare it to two other Sinai manuscripts that have Latin folia used as endleaves. Sinai Greek 567 is a Menaeon for the month of November. There are six paper flyleaves in Latin at the beginning of the manuscript, and six at the end. These contain parts of a Latin Antiphony, with portions of the Christmas service, and the feasts of Saint Stephen, Saints James and John, and the Holy Innocents. Sinai Arabic 455 contains homilies, lives of the saints, and parts of the Old Testament. Two parchment leaves with Latin script now serve as flyleaves at the beginning of the manuscript. These contain text from an Epistolary.

If we compare the three texts, we see that they are the products of the same scriptorium, though produced at different times. Features otherwise unknown in Latin manuscripts may be seen in all three. The Epistolary seems to date from the ninth century, with the Psalter and the Antiphony dating to the tenth century. The evidence points to a scriptorium where Latin was still alive, though at some remove from the Latin speaking West, and in an area where the scribes were bilingual or even trilingual, accustomed to writing in Greek and Syriac or

Arabic. It is likely that the manuscripts were written in Jerusalem, or one of the areas of the Holy Land. We should not rule out the possibility that they were written at Sinai. These manuscripts become an important witness to a Latin presence in the Holy Land before the First Crusade.⁹

Two recent developments promise to increase the manuscript evidence for connections between Sinai and the Latin West. In 1975, repairs were being carried out to the tower of Saint George, which projects from the north wall of the monastery. A deposit of manuscript leaves and fragments came to light. We know now that this is where the oldest manuscripts were kept centuries ago, since it is one of the most secure rooms of the monastery. In 1734, Archbishop Nikiphoros Marthales created new quarters for the monastery library, and asked that the manuscripts be gathered there from the numerous places where they had been stored before. Manuscripts that were already in a ruinous state were left behind in the tower room. These manuscripts are known collectively as the New Finds.

Among them were missing quires of the Sinai Latin psalter. It is now almost complete. There was also a Latin liturgical manuscript, and over forty individual leaves and fragments with Latin text. The scholar responsible for publishing the catalogues of the New Finds did not think the Latin manuscripts and fragments were numerous enough to merit a catalogue of their own. But even a single leaf will allow us to read and identify the text, to determine the style of script, to assign a probable date for the script, and to consider the way in which it might have reached Sinai. Each leaf and fragment is important in piecing together the connections between Sinai and the West.

These texts are even now being studied by Michelle Brown, a recognized authority on the Lindisfarne Gospels, and in time, a catalogue of the Sinai Latin New Finds will be published. They are written in a variety of scripts, and cover a considerable span of time. Among them are music manuscripts, with notations in Gregorian chant.

The second development is the recovery of the Sinai palimpsests through multi-spectral imaging. A palimpsest is a manuscript where the original text was erased, and the valuable

⁹ E. A. Lowe, "Two Other Unknown Latin Liturgical Fragments on Mount Sinai," *Scriptorium*, vol. xix (1965): 3-29.

parchment used a second time. The underlying text most often survives as a faint image. Until now, these have eluded attempts to read them. But by photographing these manuscripts with a series of narrow bandwidths of light, ranging from ultraviolet, through the visible spectrum, to infrared, and then manipulating the colour channels and enhancing the image, the faint underlying text very often becomes clear and legible.

Sinai Arabic New Finds 8 and 28 are a manuscript of the Gospels in Arabic, dated to the second half of the eighth century, or the beginning of the ninth. Parchment must have been very difficult to obtain at that time. The leaves of this manuscript are very often sewn together from two, three, or four small patches, and most of these are leaves where the original text was erased. A decorative initial is faintly visible on one leaf, and Latin is visible in the margin below. Multi-spectral imaging allows us to see the text more clearly. It is written in an Insular script, a style of writing developed in Ireland, that spread to England, where it flourished between 600 and 850. This was the age of Aidan and Cuthbert and Bede, the time of an unusual flowering of monasticism in England.

Scholars have long noted parallels between earliest monasticism in the British Isles, and earliest monasticism in Egypt, in its organization, its architecture, and its spiritual ethos. Now, for the first time, we have manuscript evidence for a link between that world, and Sinai.

We have only now completed the photography of this manuscript with multi-spectral imaging. As it is studied and analyzed, not only for the texts it contains, but for the archaeological levels, as it were, of the underlying and superimposed texts, its history will become more clear. But already it points to interconnections that have been little appreciated in histories of that time.

The Sinai monastery also has over one thousand scrolls in Arabic, and eight hundred in Turkish. Many of them are firmans, a record of the monastery's long existence as a respected Christian institution under Islamic rulers. Some of these are also beautiful works of art.



Illustration 9. A berat issued to the Sinai Monastery by Sultan Mahmud I in 1731

This is a *berat* or *nişan* ('patent' or 'title of privilege') issued to the Mount Sinai Monastery upon the accession to the Ottoman throne of Sultan Mahmud I, who reigned from 1730–1754. The document confirms the privileges such as immunity from taxation and protection of the monks, the monastery, and its possessions (fields, gardens, orchards) from harassment, encroachment, and other harm. It is dated 15 Safar 1144/19 August 1731.

The *berat* is surmounted by the *tuğra* of Sultan Mahmud I, a complex monogram or cipher formed by the Sultan's name and titles. This is enclosed in a triangular form that rises above it known as the tree of life, inspired by the cypress, which is itself filled with a delicate swirling pattern of stylized flowers and leaves in the *hatayi* style, executed in red, blue, and gold upon a pale blue ground.



Illustration 10. The tuğra of Sultan Mahmud I

Beneath the *tuğra* are eighteen lines written in *divani* script on a rising line, each line alternating between gold, red, and black. Golden disks adorn the beginning, the middle, and the end of every line. At the conclusion of the document is the signature of the scribe.

The manuscripts of the Sinai library are essential for the study of the scriptures, the services, and the writings of the Church Fathers. Illuminated manuscripts preserve magnificent examples of miniature painting, and allow art historians to trace developments in style, and correlations with iconography.

But the Sinai manuscripts are not works of scholarship only. They were created for use in the services, or to inspire and sustain the monks in their devotion. They still exist in their original context, and this gives an added dimension to each manuscript. Collectively, they tell us much about the monks who lived there, and the pilgrims who came there, over the centuries, from both East and West.

The manuscripts also show that Sinai played an essential role in the dissemination of texts from the world of late antiquity, to the Arabic speaking world. The scrolls in Arabic and Turkish are a witness to the long history of the Sinai monastery as a respected Christian institution within the world of Islam.

The Sinai library is a treasure that has been preserved by the monks of Sinai from the fourth century, even to our own day. But it is a treasure that we hold in trust. It is a treasure that deserves to be shared, and better known, by the whole world.

Bibliography

Brubaker, Leslie, and John Haldon. *Byzantium in the Iconoclast Era c. 680-850: A History*. Cambridge: Cambridge University Press, 2011.

Gippert, J., W. Schulze, Z. Aleksidze, J.-P. Mahé (eds.). *The Caucasian Albanian Palimpsests of Mount Sinai*. Monumenta Palaeographica Medii Aevi: Series Ibero-Caucasica. Turnhout, Belgium: Brepols Publishers, 2008.

Griffith, Sidney H. ‘Arab Christians.’ *Byzantium and Islam: Age of Transition (Seventh to Ninth Century)*. Helen C Evans with Brandie Ratliff, eds. New York: The Metropolitan Museum of Art, 2012.

Kachouh, Hikmat. “Sinai Ar. N F Parchment 8 and 28: Its Contribution to Textual Criticism of the Gospel of Luke.” *Novum Testamentum* 50 (2008).

Lowe, E.A. “An Unknown Latin Psalter on Mount Sinai.” *Scriptorium* vol. ix (1955).

Lowe, E.A. “Two Other Unknown Latin Liturgical Fragments on Mount Sinai.” *Scriptorium* vol. xix (1965).

Mango, Cyril. “Greek Culture in Palestine after the Arab Conquest.” Guglielmo Cavallo, Giuseppe de Gregorio, and Marilena Maniaci, editors, *Scritture, Libri e Testi Nelle Aree Provinciali di Bisanzio* vol. 1. Spoleto: Centro Italiano di Studi Sull’Alto Medioevo, 1991.

Skrekas, Demitrios. “Hymnographia Iambica: In Quest of Author and Audience.” *Proceedings of the Twenty-first International Congress of Byzantine Studies*, vol. 3. London: Ashgate, 2006.

Westcott, Brooke Foss, and Fenton John Anthony Hort. *The New Testament in the Original Greek, Introduction and Appendix*. Cambridge: Macmillan and Co., 1881

Pillar of Fire or Dust? Jabal Mūsā in the Nineteenth Century

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Introduction

Jabal Mūsā (جبل موسى in Arabic or Hagia Koryphē, Ἁγία Κορυφή in Greek) is a desert mountain summit towering above the Monastery of Saint Catherine at the peninsula of Sinai, Egypt. Since the third century A.D. it has been identified as the Mount of the Law, the place where Moses received the Decalogue. It is the crown of a sacred landscape which includes the Burning Bush, the cave of Elijah, other landmarks of the Exodus and Jabal Kathrin, where the body of Saint Catherine was discovered. Jabal Mūsā is also the focal point of a monastic society graced with the patronage of Byzantine emperors and of rulers and officials in the Fātimid caliphate and the Mamlūk sultanate. It has survived the onslaught of Islam and the Crusades as a destination for Christian, Muslim and Jewish pilgrimage.¹ These qualities were already in place by the twelfth century and some continue to this day.

However, this article will explore an unknown chapter in the history of Jabal Mūsā through works by writers and artists from Western Europe and the United States dating between 1822 and the beginning of World War I. In 1822 Burckhardt's *Travels in Syria and the Holy Land* was published.¹ It was the first book to question the identification of the summit with the biblical site on the basis of archaeology and topography. Hundreds of books and articles followed, arguing for or against contestants for the title of the Mount of the Law. Was Jabal Mūsā actually the place where God had trodden? Did Moses hide in one its caves in the presence of Jehovah? The mountains of Sinai were described, measured, sketched and photographed, questioned and often dismissed. The amount of information in print was such that long essays on the topography and climate of Sinai could be produced by scholars who had never set foot in Egypt.² The controversy largely conformed to the religious, cultural and

¹ On the early Islamic period at Sinai, see George Manginis, "A Fātimid period kursī at the Monastery of Saint Catherine on Mount Sinai," in *Aegis: Essays in Mediterranean Archaeology presented to Matti Egon by Scholars of the Greek Archaeological Committee UK* (Oxford: British Archaeological Reports, forthcoming).

¹ On Burckhardt, see below *Rigorous Scholars*.

² Professor Carl Ritter (German, 1779–1859) published in 1848 hundreds of pages on Sinaitic landmarks without ever having visited the place, see Carl Ritter, *Allgemeine Erdkunde Th. XIV: Asien. Band VIII. Zweite Abtheilung. Drittes Buch: West-Asien. Band VII. Fünfte Abtheilung: Die westlichen Gliederungen von West-*

gender diversity of the body of authors. Accounts by Roman Catholic Christian visitors as well as by female travellers, irrespective of religious persuasion, did not share the critical tone of male Protestants. The latter's attitude was founded on their certainty of the literal truth of the Bible, their rejection of ecclesiastical tradition and their anti-monastic feelings.

Biblical Scholarship in the Nineteenth Century

The resurgence of Sinaitic studies in the 1820s was mostly inspired by the popularity of Biblical scholarship. It was a time when sermons and theology pamphlets were widely read by the middle class.³ The Methodist and Evangelical movements had impressed upon a willing audience the teachings of Protestant Christianity. Among them were the principle of "Bible Alone" (*Sola Scriptura*), the study of the Bible beyond the confines of the established Church and the rejection of ecclesiastical tradition. There was also the principle of "Priesthood of All Believers," the legitimisation of non-clerics to conclude on matters of Biblical exegesis. Fervent preachers encouraged travellers to stray outside the set paths of pilgrimage. New Testament sites, like the Holy Sepulchre in Jerusalem or the Church of the Nativity in Bethlehem, had been identified since the Early Christian period with plausible accuracy. Furthermore, they were under the hold of non-Protestant church authorities. However, the identification of Old Testament sites was vague and based only on later traditions, which were easier to refute.⁴ As a result, Sinai became a popular destination for believers who roamed the desert as if no one had ever been there before. The positivist methods of Protestants would validate the metaphysical revelation of the *Exodus* through empirical examination.⁵ They would gain personal salvation and the justification of the individual before God, according to the third principle of "Faith Alone" (*Sola Fide*).

Asien. Das Gestadeland West-Asiens. Die Sinai-Halbinsel, Palästina und Syrien. Erster Abschnitt: Die Sinai-Halbinsel (Berlin, 1848).

³ D. C. Somervell, *English Thought in the Nineteenth Century* (London: Methuen & Co., 1957, seventh reprint), 101–102; John James Moscrop, *Measuring Jerusalem. The Palestine Exploration Fund and British Interests in the Holy Land* (London and New York: Leicester University Press, 2000), 2.

⁴ Moscrop, *Measuring Jerusalem*, 2.

⁵ Moscrop, *Measuring Jerusalem*, 13–16; on the particularly empirical streak of nineteenth-century British thinking, see Ian Chambers, "Narratives of Nationalism. Being 'British'," in *Space and Place. Theories of Identity and Location*, ed. Erica Carter, James Donald and Judith Squires (London: Lawrence and Wishart, 1993), 149–50; on the experiential belief of American Protestants, see John Davis, *The Landscape of Belief. Encountering the Holy Land in Nineteenth-Century American Art and Culture* (Princeton: Princeton University Press, 1996), 36.

Rigorous Scholars

The first sceptic was the Swiss Johann Ludwig Burckhardt (1784–1817, visited Sinai twice, in 1 to 4 and 18 to 30 May 1816), whose account was posthumously published in 1822.⁶ Burckhardt was a knowledgeable traveller, fluent in Arabic, acquainted with desert life and respectful towards monastic traditions. He considered three summits, Jabal Mūsā, Jabal Kathrin and Jabal Sirbāl, overlooking the Pharan oasis. He concluded that Sirbāl was originally thought to be Mount Sinai, whereas the two other mountains had a stronger claim to being the real holy place, according to Scripture.⁷

Many zealot doubters followed in Burckhardt's footsteps. They surveyed every range, mountain and hill in the peninsula, opted for one of several alternative Sinais and pontificated based on their observations and the views of previous scholars, whose authority they held in esteem.⁸ After four decades of irate controversy, the need was identified for a systematic mapping of the peninsula. In the mid-1860s, the London-based Palestine Exploration Fund organised the mapping and gathering of scientific facts, place names, inscriptions, building plans and photographic views of Sinai. The project was the first Ordnance Survey outside the British Isles and fulfilled multiple agenda.

The years between the 1830s and the 1870s, which mark the highpoint of the Sinai controversy, witnessed the rise of European countries into worldwide economic and political prominence. Improved means of transport facilitated global trade networks. The 1856 Treaty of Paris ensured better access for Europeans into Ottoman territory and casual visitors collected intelligence alongside antiquities.⁹ The economic prospects of Sinai were examined by Europeans and Egyptians alike. Muhammad ʿAlī (1769?–1849), the Albanian ruler of Egypt from 1805, had employed in 1830 and 1853 Louis Maurice Adolphe Linant

⁶ On Burckhardt, see Deborah Manley and Sahar Abdel-Hakim, *Traveling through Sinai from the Fourth to the Twenty-first Century*, with illustrations by W. H. Bartlett (Cairo and New York 2006), 241.

⁷ John Lewis Burckhardt, *Travels in Syria and the Holy Land*, edited by William Martin Leake (London: John Murray, 1822), 609.

⁸ On alternative Sinais and their supporters, see Georgios Manginis, "Hagia Koryphē (Jabal Mūsā) in Sinai, Egypt" (PhD thesis, SOAS University of London, 2010), 259–69.

⁹ Louis Vaczek and Gail Buckland, *Travelers in Ancient Lands. A Portrait of the Middle East, 1839–1919* (Boston and New York: Bulfinch Press, 1981), no pagination; Moscrop, *Measuring Jerusalem*, 45–48.

de Bellefonds (French, 1799–1883), later the chief engineer of the Suez Canal, to explore the area's mineral wealth.¹⁰ The Frenchman had worn a different hat when he accompanied Emmanuel Simon Joseph, the marquis de Laborde (French, 1807–69) in 1828 for an art-historical visit to the Monastery.¹¹ Gunboats followed in the wake of businessmen and scholars. The peninsula was strategically situated on the sea route from the Mediterranean to India through the Suez Canal which opened to traffic in 1869, a few months after the conclusion of the *Ordnance Survey*.¹² British interests had opposed the construction and control of the Canal by the French and the timing of the mission to Sinai makes it highly probable that it was part of a project to gather information and control this waterway.¹³

The *Ordnance Survey* party included two captains, a sergeant-major and three non-commissioned officers of the Royal Engineers, a reverend, a Fellow of Saint John's College Cambridge and three local guides.¹⁴ It was a High Victorian mixture of religion, scholarship and imperialism.¹⁵ The survey was seen as a crusade serving God, country and scientific progress.¹⁶ In the words of William Thomson (British, 1819–90), archbishop of York and the Fund's president: "This country of Palestine belongs to you and to me. It is essentially ours."¹⁷ The expedition was underwritten by Angela Georgina, first Baroness Burdett-Coutts (British, 1814–1906), richest woman in Britain, philanthropist, patriot and Church of England supporter.¹⁸

¹⁰ Jean Mazuel, *L'œuvre géographique de Linant de Bellefonds. Étude de géographie historique* (Le Caire: Publications de la Société Royale de Géographie d'Égypte, 1937), 17–22; Mahfouz Labib, *Pèlerins et voyageurs au Mont Sinaï* (Le Caire: Inst. français d'archéol. Orientale, 1961), 114–16.

¹¹ Mazuel, *L'œuvre géographique*, 99–103; on Laborde, see Zev Vilnay, *The Holy Land in Old Prints and Maps*, rendered from the Hebrew by Esther Vilnay in collaboration with Max Nurock (Jerusalem: Rubin Mass, 1963), XXI–XXII; Manley and Abdel-Hakim, *Traveling through Sinai*, 244.

¹² Moscrop, *Measuring Jerusalem*, 58–60; Joseph J. Hobbs, *Mount Sinai* (Austin: University of Texas Press, 1995), 244.

¹³ C. W. Wilson and H. S. Palmer, under the direction of Henry James, *Ordnance Survey of the Peninsula of Sinai* (Southampton: Ordnance survey office London, H.M. Stationery off., G.E. Eyre and W.S. Spottiswoode, printers, 1869), part I: *Account of the Survey (With Illustrations)*, 5–15, 139–49; Moscrop, *Measuring Jerusalem*, 81.

¹⁴ Reverend F. W. Holland, "Explorations in the Peninsula of Sinai," in *The Recovery of Jerusalem. A Narrative of Exploration and Discovery in the City and the Holy Land*, by Capt. Wilson and Capt. Warren (London, 1871), 514–15.

¹⁵ Vaczek and Buckland, *Travelers in Ancient Lands*, no pagination.

¹⁶ Moscrop, *Measuring Jerusalem*, 2–3, 102–104.

¹⁷ Address to the first meeting to the Fund at Willis's Rooms, London, 22 June 1865; see Moscrop, *Measuring Jerusalem*, 70–71.

¹⁸ Kathleen Stewart Howe, *Revealing the Holy Land: The Photographic Exploration of Palestine* (Santa Barbara: Santa Barbara Museum of Art, 1997), 40.

Amateur Theologians

To this day, the five volumes of the *Ordnance Survey* remain the most impressive monument to the period's obsession with Biblical topography. The answer proposed was in favour of Jabal Mūsā. The area had the best natural resources and its topography was closer to the *Exodus*. However, this answer left some unsatisfied, among them Dr Charles Tilstone Beke (British, 1800–74). Born in Stepney, Beke gained his doctorate from the University of Tübingen.¹⁹ His travels combined geography, archaeology, do-it-yourself Biblical hermeneutics and business. It was only a matter of time before he addressed the most debated issue of Biblical topography, the location of the Mount of the Law. He suggested that Biblical Egypt was not in the Nile Delta but further east, therefore Mount Sinai should be located beyond the Gulf of Aqaba.²⁰ To prove this, he travelled to Arabia between 1873 and 1874. He refused to be a part of the “general system of fraud and imposture in which the whole history of the convent [of Saint Catherine] is involved” and insisted on “[t]he deliberate fraud and falsehood of the Greek clergy.”²¹ Therefore, he did not set foot on Sinai altogether. Relying on the word of a total stranger, he opted for “Jebel-e’-Nūr” near Aqaba and sent someone to check for signs of God’s presence.²² Satisfied with his report, he declared this to be the true Mount of the Law and published his discovery in *The Times*,²³ to the dismay of the authorities of the *Ordnance Survey*.²⁴

Dr Beke exemplifies the psychopathology of a Protestant on a mission of Biblical discovery beyond the political, economic and military priorities of the *Ordnance Survey*. As gleaned from his texts, the questioning of Jabal Mūsā went hand in hand with anti-monastic feelings

¹⁹ Charles Tilstone Beke, *Origines Biblicæ: or Researches in Primeval History* (London: Parbury, Allen & Co., 1834).

²⁰ Beke, *Origines Biblicæ*, 154–96; Charles T. Beke, *On the Localities of Horeb, Mount Sinai, and Midian, in Connexion with the Hypothesis of the Distinction Between Mizraim and Egypt*, reprinted from the *British Magazine* (London, 1835); Charles T. Beke, *A Few Words with Bishop Colenso on the Subject of the Exodus of the Israelites and the Position of Mount Sinai* (London: Williams & Norgate, 1862), 9–12; Charles T. Beke, *The Idol in Horeb: Evidence that the Golden Image at Mount Sinai was a Cone, and not a Calf* (London: Tinsley Brothers, 1871); Charles T. Beke, *Mount Sinai A Volcano* (London: Tinsley Brothers, 1873, second edition).

²¹ Quotes from Charles Beke, *The Late Dr. Charles Beke's Discoveries of Sinai in Arabia and of Midian. With Portrait, Geological, Botanical, and Conchological Reports, Plans, Map, and Thirteen Wood Engravings. Edited by his Widow* (London: Trübner & Co., Ludgate Hill, 1878), 31, 32.

²² Beke, *The Late Dr. Charles Beke's Discoveries*, 406–12.

²³ On 27 February 1874, reprinted in Beke, *The Late Dr. Charles Beke's Discoveries*, 560.

²⁴ Beke, *The Late Dr. Charles Beke's Discoveries*, 560–63, 567–69, 575–80.

and suspicion against the Orthodox clergy. Heterodoxy was not enough to justify such scorn. The perceived gap between the ‘civilised’ nations of the West and the ‘backward’ nations of the East is clearly manifested in the scrutinising reports on the ‘naive beliefs’ of the monks.²⁵ They were accused of being uneducated, idle, greedy and deceitful, “a dull, stupid class of men,”²⁶ not Christian brethren but slothful ‘Orientals.’ Such attitude seems to have mainly characterised Anglo-Saxon writers without knowledge of modern Greek or Arabic. The British artist William Henry Bartlett (1809–54, visited Sinai between 12 and 20 October 1845) explained this as part of “that undaunted sense of privilege and rightness in being British.”²⁷ However, the sceptics were not only “*milord*”²⁸ but also German-speakers and Americans, all sharing Protestant beliefs.

Alternative Views

Travellers from Roman Catholic countries were more moderate, despite the millennial schism which separated their Church from Orthodoxy.²⁹ It is possible that the (predominantly French) Catholics felt antagonistic towards the (predominantly British) Protestants.³⁰ However, the Catholics’ sympathy must have more to do with their adherence to the Church of Rome, which accepted pilgrimage, patristic and ecclesiastical tradition and monasticism.

Female travellers frequented Sinai from the mid-nineteenth century and they were often British. Their consideration, even sympathy, for the monks is contrasted with the statements

²⁵ “Before we leave Mount Sinai we will add a brief notice on the surroundings. They are replete with silly legends which disturb the gravity of a Protestant traveller, and yet show the deep local impression of the Mosaic events;” quote from Philip Schaff, *Through Bible Lands: Notes of Travel in Egypt, the Desert, and Palestine* (New York: American Tract Society, 1878), 193; on Philip Schaff (Swiss-born American, 1819–93), see Manley and Abdel-Hakim, *Traveling through Sinai*, 248.

²⁶ Quote by Rev. David Austin Randall (American, 1813–84, at Sinai 3–6 March 1861), see Reverend D. A. Randall, *The Handwriting of God in Egypt, Sinai, and the Holy Land: The Records of a Journey from the Great Valley of the West to the Sacred Places of the East* (Philadelphia, 1867), 289. For his Sinai trip, see Randall, *The Handwriting of God*, 285–345; Reverend D. A. Randall, *Ham-Mishkan, The Wonderful Tent. An Account of the Structure, Signification, and Spiritual Lessons of the Mosaic Tabernacle Erected in the Wilderness of Sinai* (Cincinnati: Robert Clarke & Co., 1886), 34–420.

²⁷ Quote in Lesley Hazleton, *Where Mountains Roar. In Search of the Sinai Desert* (London: Gollancz, 1980), 3; see also W. H. Bartlett, *Forty Days in the Desert, on The Track of the Israelites; or, A Journey from Cairo, by Wady Feiran, to Mount Sinai and Petra* (London: Arthur Hall, Virtue, fifth edition 1862, first published 1848), 76; on W. H. Bartlett, see Manley and Abdel-Hakim, *Traveling through Sinai*, 239–40.

²⁸ Sir Frederick Henniker, *Notes during a Visit to Egypt, Nubia, the Oasis, Mount Sinai, and Jerusalem* (London: John Murray, 1823), 221–22.

²⁹ Manginis, “Hagia Koryphē,” 253–55.

³⁰ Moscrop, *Measuring Jerusalem*, 41–42.

of their male equivalents. This could be due to the monks' preference for these frail and rarely-seen creatures. For example, the superior of the Monastery offered an ailing Miss Platt (British, dates unknown) butter, eggs and cheese during the fasting period of Lent.³¹ Female travellers were also excited for an adventure rarely experienced by members of their sex. Furthermore, an aggressive writing style would be deemed inappropriate for ladies. As to their opinions on the Sinai controversy, they usually preferred the traditional identification.³²



Illustration 1. Rev. Edward Thomas Daniell, *Summit of Mount Sinai or Jebel Musa*, 1840/1. Watercolour, gouache and graphite on paper, 33.2 x 49.4 cm (detail). Yale Center for British Art, Paul Mellon Collection.

Artists

Rudimentary depictions of the Sinai landscape had been included in pilgrimage accounts since the fourteenth century. However, by the nineteenth century views combined artistic merit and realistic detail. One of the earliest painters to record the Sinai landmarks *en plein air* was the Reverend Edward Thomas Daniell (British, 1804–42, visited Sinai in 1840/1), see

³¹ Miss Platt, *Journal of a Tour through Egypt, the Peninsula of Sinai, and the Holy Land*, in 1838, 1839, Volume II (London: Richard Watts, 1842), 150–51.

³² Manginis, "Hagia Koryphē," 255–59.

illustration 1. His work was not reproduced in engravings and therefore never became widely known.

Popularity would be the achievement of David Roberts (British, 1796–1864), who travelled in 1838–39.³³ His works were engraved and became successful with a public eager for exotic landscapes with religious associations.³⁴ The romanticism of his gaze made subjects majestic, indeed sublime; he painted “the terrible wilderness.” His lithograph of Jabal Mūsā balances the Muslim mosque and the Christian chapel in a composition charged with meaning, two places of worship across each other on solid rock, their ruin signifying humility, see illustration 2.

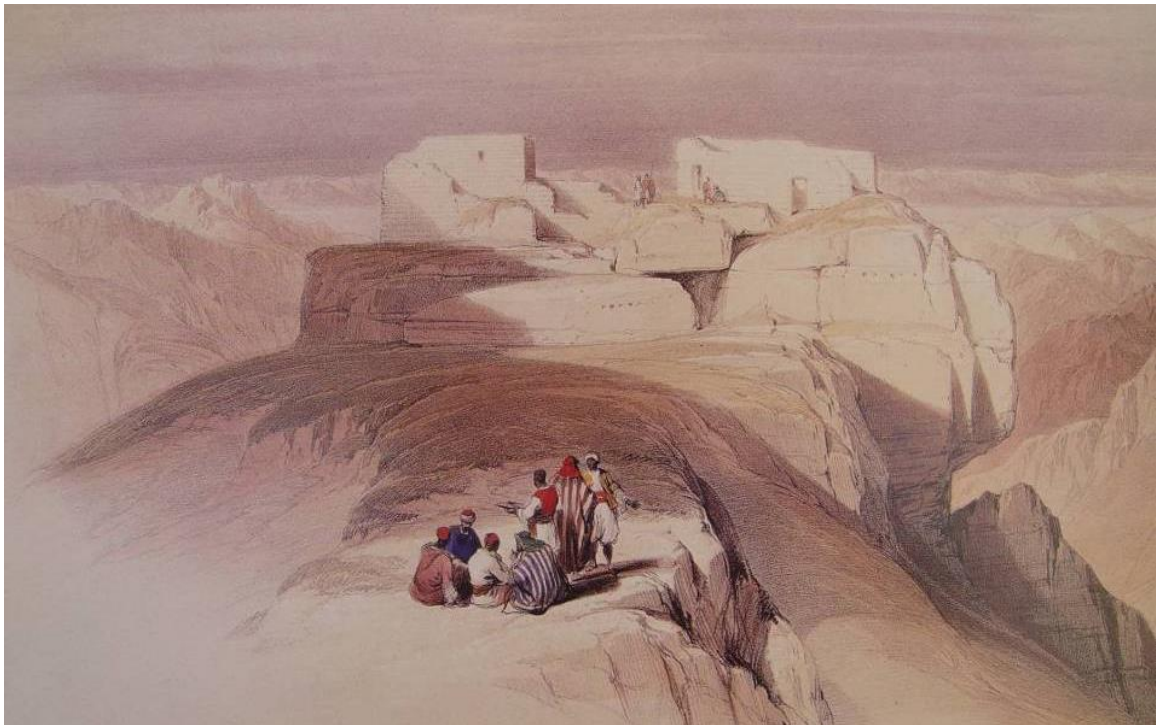


Illustration 2. David Roberts, Summit of Mount Sinai shewing the Christian and Mahometan Chapels (based on a drawing executed in February 1839). Lithograph on paper. Author's collection.

³³ On Roberts' journeys, see Vilnay, *The Holy Land*, XXIII.

³⁴ The prints were first exhibited individually and then published as a five-volume folio series between 1842 and 1849; see David Roberts, *The Holy Land, Syria, Idumea, Arabia, Egypt, & Nubia, from drawings made on the spot by D. Roberts ... With historical descriptions by the Revd George Croly, ... (Egypt and Nubia. With historical descriptions by William Brockedon.)* (London: F.G. Moon, 1842–49).

The panorama from Jabal Mūsā in the 1839 edition of Gotthilf Heinrich von Schubert's work on the Holy Land (German, 1780–1860, at Sinai between 28 February and 7 March 1837), executed after paintings by the German artist Johann Martin Bernatz (1802–78), is unique, see illustration 3.³⁵ Although the possibility of artistic freedom should not be excluded, in this engraving the shift was made from Roberts's sublime to the accurate, a move which was completed by the new medium of photography.



Illustration 3. Johann Martin Bernatz, *Panorama vom Sinai* (based on drawings made in March 1837). Lithograph on paper. Author's collection.

The first photographer to work at Sinai was the British Francis Frith (British, 1822–98, visited Sinai between 1856 and 1857), who recorded the area in detail.³⁶ The sacred desert did not disappoint his public. There was no squalor or ugly buildings to hide or picturesque poverty to forget (as in Jerusalem or Cairo), only mountains, as sublime as in Roberts' engravings. The

³⁵ G. H. v. Schubert and J. Bernatz, *Bilder aus dem Heiligen Lande. Vierzig Ausgewählte Original-Ansichten Biblisch-Wichtiger Orte, treu nach der Natur aufgenommen und gezeichnet von J. M. Bernatz* (Stuttgart: Steinkopf'sche Buchhandlung, 1839), plates 6, 7 and 8; G. H. v. Schubert, J. Roth and J. M. Bernatz, *Album des heiligen Landes. 50 Ausgewählte Original-Ansichten biblisch wichtiger Orte, treu nach der Natur gezeichnet von J. M. Bernatz* (Stuttgart and Leipzig, 1856), plates 10 and 11. For Schubert's narrative of his journey, see Gotthilf Heinrich von Schubert, *Reise in das Morgenland in den Jahren 1836 und 1837, zweiter Band* (Erlangen: Palm u. Enke, 1839), 307–55; for another album, see G. H. v. Schubert, J. Roth, O. Fraas and J. M. Bernatz, *Palästina. Neues Album des heiligen Landes. 50 Ansichten biblisch wichtiger Orte. Natur-Aufnahmen von J. M. Bernatz, und anderen Künstlern* (Stuttgart: J.F. Steinkopf, 1868), plate 5; for J. M. Bernatz, see Vilnay, *The Holy Land*, XXIII.

³⁶ Francis Frith, *Egypt, Sinai, and Jerusalem: A Series of Twenty Photographic Views by Francis Frith, with Descriptions by Mrs. Poole and Reginald Stuart Poole* (London: S. Virtue, 1860); Francis Frith, *Cairo, Sinai, Jerusalem, and The Pyramids of Egypt: A Series of Sixty Photographic Views by Francis Frith, with Descriptions by Mrs. Poole and Reginald Stuart Poole* (London: S. Virtue, 1860); on F. Frith, see Caroline Williams, "A Nineteenth-Century Photographer: Francis Frith," in *Travellers in Egypt*, ed. by Paul Starkey and Janet Starkey (London, 1998), 168–78.

Ordnance Survey photographs of James MacDonald, accompanying texts by scholars and line drawings by draughtsmen, were drier but no less accomplished.³⁷

Nineteenth century artists like Daniell, Roberts, Bernatz, Frith and MacDonald produced works which were at once sources of information, arguments for scholarship, materials for metaphysical contemplation and enticements for tourism. They made Mount Sinai recognisable through its attributes: barren mountain tops, vertical cliff faces and strategically-placed lonely trees. It was a visual vocabulary created between the 1830s and 1870s and still in use.

Tourists

Despite the frequently negative proclamations of scholars, Jabal Mūsā remained a perennial favourite of adventurous tourists.³⁸ It was the British firm founded by Thomas Cook (British, 1808–92) that made Sinai popular with the affluent middle classes since 1869.³⁹ The “Cookii,” as the Bedouin nicknamed them, camped outside the Monastery walls. They consumed familiar delicacies like Yorkshire bacon and potted salmon,⁴⁰ a diet different from the severe eating habits of the monks. When on Jabal Mūsā, options were limited. The Reverend George Fisk (British, dates unknown) in May 1842 described a meal of “very coarse brown bread, goat’s milk cheese, black olives dressed in oil, delicious coffee, fresh water from the spring, and a little flask of date spirit.”⁴¹ The Reverend David Austin Randall (American, 1813–84) in March 1861 got arak, dried dates and figs, brown bread and coffee.⁴² Paul Lenoir (French, 1826–81), visiting *circa* 1868, complained that it was unlikely that the

³⁷ Vaczek and Buckland, *Travelers in Ancient Lands*, no pagination; on MacDonald, see Howe, *Revealing the Holy Land*, 40–44.

³⁸ John Kitto, “Mount Sinai,” *The Penny Magazine of the Society for the Diffusion of Useful Knowledge* 231 (November 7, 1835), 433–34; John Kitto, “Convent of Mount Sinai,” *The Penny Magazine of the Society for the Diffusion of Useful Knowledge* 233 (November 21, 1835), 449–52.

³⁹ Labib, *Pèlerins et voyageurs*, 137, 144–45.

⁴⁰ Piers Brendon, *Thomas Cook. 150 Years of Popular Tourism* (London: Seckel and Warburg, 1992), 132.

⁴¹ Reverend George Fisk, *A Pastor’s Memorial of Egypt, the Red Sea, the Wildernesses of Sin and Paran, Mount Sinai, Jerusalem, and Other Principal Localities of the Holy Land, visited in 1842; with Brief Notes of a Route through France, Rome, Naples, Constantinople, and up the Danube* (London, 1843), 159.

⁴² Randall, *The Handwriting of God*, 313, 319.

crows fed the Monastery's stale bread to Elijah. He suggested that the birds were fattening the prophet to eat him themselves — without bread.⁴³



Illustration 4. Sherds of transfer-printed stoneware from Staffordshire, England, excavated in Jabal Mūsā. 75, 76, 77: Flatware decorated in a “seaweed” pattern. 78: Flatware decorated in the “willow” pattern. 79: Unidentified pattern. Photograph by the author.

In the post-Thomas Cook period, Isabella Bird (British, 1831–1904) in 1878 found traces of an elegant meal, including an empty bottle of champagne which “profaned this summit.” She “threw it with indignation over the southern precipice.”⁴⁴ Such travellers must have brought with them transfer-printed stoneware vessels, the sherds of which testify to meals served in style on Staffordshire tableware, see illustration 4.⁴⁵ Similar wares produced in England were even decorated with prints bearing Sinai-inspired names, like Horeb.

By the early twentieth century cars covered the distance from Cairo in a fraction of the time it took on camelback. Pilgrims, art historians, palaeographers, tourists or intellectuals in search

⁴³ Paul Lenoir, *Le Fayoum le Sinaï et Pétra. Expédition dans la Moyenne Égypte et l’Arabie Pétrée sous la direction de J. L. Gérôme* (Paris 1872), 251.

⁴⁴ Manley and Abdel-Hakim, *Traveling through Sinai*, 223, 240.

⁴⁵ George Manginis, “Hagia Koryphe, Sinai, after the coming of Islam: The pottery evidence (abstract),” *Assemblage 6* <<http://www.shef.ac.uk/assem/issue6/manginis.htm>>.

of alternative lifestyles arrived in “Jæger waistcoats, mackintoshes, and thick dressing gowns.”⁴⁶ Their attitude towards the Sinai clergy had changed and writers contemplated monastic life with thoughtful sympathy.⁴⁷ However, nobody focused on Jabal Mūsā anymore. It was just another feature of the landscape, a picturesque destination among others.

Conclusion

The nineteenth century had been a turning point in the biography of Jabal Mūsā. The Mount Sinai controversy can be linked to Biblical hermeneutics and empiricism, both spearheaded by Protestant intellectuals, and relates to narratives of cultural supremacy and Western colonialism. Despite the judicious voices of Catholic and female visitors and the fascination of artists and tourists, the majority of Sinai travellers would not surrender their aspirations to discover a Sinai of their own.

In the 1962 film *Lawrence of Arabia* by Sir David Lean (British, 1908–91), a dialogue epitomises some of the attitudes discussed above. While crossing the North Sinai desert with two Bedouin companions, the protagonist encounters a sand tornado. Smiling, he muses “Pillar of Fire,” referring to the godly sign sent to guide Moses and the Israelites to the Mount of the Law. His young companion objects: “No Sir. Dust.”

⁴⁶ Arthur W. Sutton, *My Camel Ride from Suez to Mount Sinai* (London: Bennett, 1913), 90–112, plates 40–59; on late Victorian tourists, see Hobbs, *Mount Sinai*, 248–54.

⁴⁷ H. J. Llewellyn Beadnell, *The Wilderness of Sinai. A Record of Two Years' Recent Exploration* (London: Edward Arnold and Co. 1927), 164–74; H. V. Morton, *Through Lands of the Bible* (London 1938); Louis Golding, *In the Steps of Moses the Lawgiver* (London: Rich & Cowan Ltd., 1938); Paul Gotch, *Three Caravan Cities. Petra, Jerash, Baalbek and St. Catherine's Monastery, Sinai* (Alexandria: Whitehead Morris, 1945), 12–28.

Bibliography

Bartlett, W. H. *Forty Days in the Desert, on The Track of the Israelites; or, A Journey from Cairo, by Wady Feiran, to Mount Sinai and Petra*. London: Arthur Hall, Virtue, fifth edition 1862, first published 1848.

Beadnell, H. J. Llewellyn. *The Wilderness of Sinai. A Record of Two Years' Recent Exploration*. London: Edward Arnold and Co., 1927.

Beke, Charles Tilstone. *Origines Biblicæ: or Researches in Primeval History*. London: Parbury, Allen & Co, 1834.

Beke, Charles Tilstone. *On the Localities of Horeb, Mount Sinai, and Midian, in Connexion with the Hypothesis of the Distinction Between Mitzraim and Egypt*. Reprinted from the *British Magazine* London, 1835.

Beke, Charles Tilstone. *A Few Words with Bishop Colenso on the Subject of the Exodus of the Israelites and the Position of Mount Sinai*. London: Williams & Norgate, 1862.

Beke, Charles Tilstone. *The Idol in Horeb: Evidence that the Golden Image at Mount Sinai was a Cone, and not a Calf*. London: Tinsley Brothers, 1871.

Beke, Charles Tilstone. *Mount Sinai A Volcano*. London: Tinsley Brotehrs, 1873, second edition.

Beke, Charles Tilstone. *The Late Dr. Charles Beke's Discoveries of Sinai in Arabia and of Midian. With Portrait, Geological, Botanical, and Conchological Reports, Plans, Map, and Thirteen Wood Engravings. Edited by his Widow*. London: Trübner & Co., Ludgate Hill, 1878.

Brendon, Piers. *Thomas Cook. 150 Years of Popular Tourism*. London: Seckel and Warburg, 1992.

Burckhardt, John Lewis. *Travels in Syria and the Holy Land*, edited by William Martin Leake. London: John Murray, 1822.

Chambers, Ian. "Narratives of Nationalism. Being 'British'," in *Space and Place. Theories of Identity and Location*, eds Erica Carter, James Donald and Judith Squires. London: Lawrence and Wishart, 1993.

Davis, John. *The Landscape of Belief. Encountering the Holy Land in Nineteenth-Century American Art and Culture*. Princeton: Princeton University Press, 1996.

Fisk, Reverend George. *A Pastor's Memorial of Egypt, the Red Sea, the Wildernesses of Sin and Paran, Mount Sinai, Jerusalem, and Other Principal Localities of the Holy Land, visited in 1842; with Brief Notes of a Route through France, Rome, Naples, Constantinople, and up the Danube*. London, 1843.

Frith, Francis. *Cairo, Sinai, Jerusalem, and The Pyramids of Egypt: A Series of Sixty Photographic Views by Francis Frith, with Descriptions by Mrs. Poole and Reginald Stuart Poole*. London: S. Virtue, 1860.

Frith, Francis. *Egypt, Sinai, and Jerusalem: A Series of Twenty Photographic Views by Francis Frith, with Descriptions by Mrs. Poole and Reginald Stuart Poole*. London: S. Virtue, 1860.

Golding, Louis. *In the Steps of Moses the Lawgiver*. London: Rich & Cowan Ltd., 1938.

Gotch, Paul. *Three Caravan Cities. Petra, Jerash, Baalbek and St. Catherine's Monastery, Sinai*. Alexandria: Whitehead Morris, 1945.

Hazleton, Lesley. *Where Mountains Roar. In Search of the Sinai Desert*. London: Gollancz, 1980.

Henniker, Sir Frederick. *Notes during a Visit to Egypt, Nubia, the Oasis, Mount Sinai, and Jerusalem*. London: John Murray, 1823.

Hobbs, Joseph J. *Mount Sinai*. Austin: University of Texas Press, 1995.

Holland, Reverend F. W. "Explorations in the Peninsula of Sinai," in *The Recovery of Jerusalem. A Narrative of Exploration and Discovery in the City and the Holy Land*, by Capt. Wilson and Capt. Warren. London, 1871.

Howe, Kathleen Stewart. *Revealing the Holy Land: The Photographic Exploration of Palestine*. Santa Barbara: Santa Barbara Museum of Art, 1997.

Kitto, John, "Mount Sinai," *The Penny Magazine of the Society for the Diffusion of Useful Knowledge* 231 (November 7, 1835).

Kitto, John, "Convent of Mount Sinai," *The Penny Magazine of the Society for the Diffusion of Useful Knowledge* 233 (November 21, 1835).

Labib, Mahfouz. *Pèlerins et voyageurs au Mont Sinaï*. Le Caire: Inst. français d'archéol. Orientale, 1961.

Lenoir, Paul. *Le Fayoum le Sinaï et Pétra. Expédition dans la Moyenne Égypte et l'Arabie Pétrée sous la direction de J. L. Gérôme*. Paris: Henri Plon, 1872.

Manginis, George. "Hagia Koryphe, Sinai, after the coming of Islam: The pottery evidence (abstract)," *Assemblage* 6 <<http://www.shef.ac.uk/assem/issue6/manginis.htm>>.

Manginis, Georgios. "Hagia Koryphē (Jabal Mūsā) in Sinai, Egypt." PhD thesis, SOAS University of London, 2010.

Manginis, George. "A Fātimid period kursī at the Monastery of Saint Catherine on Mount Sinai," in *Aegis: Essays in Mediterranean Archaeology presented to Matti Egon by Scholars of the Greek Archaeological Committee UK*. Oxford: British Archaeological Reports, forthcoming.

- Manley, Deborah and Sahar Abdel-Hakim. *Traveling through Sinai from the Fourth to the Twenty-first Century*, with illustrations by W. H. Bartlett. Cairo and New York: American University in Cairo Press, 2006.
- Mazuel, Jean. *L'œuvre géographique de Linant de Bellefonds. Étude de géographie historique*. Le Caire: Publications de la Société Royale de Géographie d'Égypte, 1937.
- Morton, H. V. *Through Lands of the Bible*. London, Methuen Publishing Ltd., 1938.
- Moscrop, John James. *Measuring Jerusalem. The Palestine Exploration Fund and British Interests in the Holy Land*. London and New York: Leicester University Press, 2000.
- Platt, Miss. *Journal of a Tour through Egypt, the Peninsula of Sinai, and the Holy Land, in 1838, 1839*, Volume II. London: Richard Watts, 1842.
- Randall, Reverend D. A. *The Handwriting of God in Egypt, Sinai, and the Holy Land: The Records of a Journey from the Great Valley of the West to the Sacred Places of the East*. Philadelphia, 1867.
- Randall, Reverend D. A. *Ham-Mishkan, The Wonderful Tent. An Account of the Structure, Signification, and Spiritual Lessons of the Mosaic Tabernacle Erected in the Wilderness of Sinai*. Cincinnati: Robert Clarke & Co., 1886.
- Ritter, Carl. *Allgemeine Erdkunde* Th. XIV: *Asien*. Band VIII. Zweite Abtheilung. Drittes Buch: *West-Asien*. Band VII. Fünfte Abtheilung: *Die westlichen Gliederungen von West-Asien. Das Gestadeland West-Asiens. Die Sinai-Halbinsel, Palästina und Syrien*. Erster Abschnitt: *Die Sinai-Halbinsel*. Berlin, 1848.
- Roberts, David. *The Holy Land, Syria, Idumea, Arabia, Egypt, & Nubia, from drawings made on the spot by D. Roberts ... With historical descriptions by the Revd George Croly, ... (Egypt and Nubia. With historical descriptions by William Brockedon.)* London: F.G. Moon, 1842–49.

Schaff, Philip. *Through Bible Lands: Notes of Travel in Egypt, the Desert, and Palestine*. New York: American Tract Society, 1878.

Schubert, Gotthilf Heinrich von. *Reise in das Morgenland in den Jahren 1836 und 1837*, zweiter Band. Erlangen: Palm u. Enke, 1839.

Schubert, G. H. v. and J. Bernatz. *Bilder aus dem Heiligen Lande. Vierzig Ausgewählte Original-Ansichten Biblisch-Wichtiger Orte, treu nach der Natur aufgenommen und gezeichnet von J. M. Bernatz*. Stuttgart: Steinkopf'sche Buchhandlung, 1839.

Schubert, G. H. v., J. Roth and J. M. Bernatz. *Album des heiligen Landes. 50 Ausgewählte Original-Ansichten biblisch wichtiger Orte, treu nach der Natur gezeichnet von J. M. Bernatz*. Stuttgart and Leipzig, 1856.

Schubert, G. H. v., J. Roth, O. Fraas and J. M. Bernatz. *Palästina. Neues Album des heiligen Landes. 50 Ansichten biblisch wichtiger Orte. Natur-Aufnahmen von J. M. Bernatz, und anderen Künstlern*. Stuttgart: J.F. Steinkopf, 1868.

Somervell, D. C. *English Thought in the Nineteenth Century*. London: Methuen & Co., 1957, seventh reprint.

Sutton, Arthur W. *My Camel Ride from Suez to Mount Sinai*. London: Bennett, 1913.

Vaczek, Louis and Gail Buckland *Travelers in Ancient Lands. A Portrait of the Middle East, 1839–1919*. Boston and New York: Bulfinch Press, 1981.

Vilnay, Zev. *The Holy Land in Old Prints and Maps*, rendered from the Hebrew by Esther Vilnay in collaboration with Max Nurock. Jerusalem: Rubin Mass, 1963.

Williams, Caroline. "A Nineteenth-Century Photographer: Francis Frith," in *Travellers in Egypt*, eds Paul Starkey and Janet Starkey. London 1998.

George Manginis, Pillar of Fire or Dust?

Wilson, C. W. and H. S. Palmer, under the direction of Henry James. *Ordnance Survey of the Peninsula of Sinai*. Southampton: Ordnance survey office London, H.M. Stationery off., G.E. Eyre and W.S. Spottiswoode, printers, 1869.

The conservation of the 6th century mosaic of the Transfiguration in the
Monastery of Saint Catherine in the Sinai ¹
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Introduction

This article introduces the Monastery of Saint Catherine, where the CCA, Centro di Conservazione Archeologica of Rome, carried out a major conservation project for the conservation of the mosaic of the Transfiguration between 2005-2008. As well as describing the nature of the monument and its context, the authors present an overview of the conservation condition of the mosaic at the beginning of the intervention and the complex restoration procedures carried out.

Mosaic description

From ancient times until today, the monastery of Saint Catherine in Sinai has continued to be a destination for pilgrims and worship. This continuity of everyday life, thanks to the presence of the monastery's community, has permitted the conservation of the ancient structure and the collection of an extraordinary number of historical, artistic and cultural documents.

Inside the fortified wall surrounding the monastery stands the Basilica, with most of its sixth-century decorations conserved. Among these, the wall mosaic representation of the Transfiguration can be found (mid-sixth century). This mosaic covers the apse and the vault above. This is one of the most important examples of early Byzantine art that has managed to remain almost entirely intact today. The mosaic decoration was accomplished using great artistic and technical skill, iconographical wealth and style. Noble and refined materials, such as gold tesserae and glass paste with tonal grading to create luminous and voluminous effects were used.

¹ This paper was also presented in lectures organized by the Saint Catherine Foundation in New York and Geneva and published in bulletin of the Foundation "Sinaiticus", 2013.

In the center of the apse, on a golden background, stands Christ. He is surrounded by a luminous mandorla formed of three turquoise bands. Moses and Elijah stand on

either side of Christ. The apostles John and James are kneeling below and Peter reclines beneath the sacred mandorla. The donors' names are inscribed in the lower part. The scene is surrounded by 31 medallions with busts of the prophets, evangelists and apostles, arranged along the sides of the central *clipeo* with an equilateral cross. This had been damaged and was reconstructed with false tesserae in 1847.

On the arch of the apse, two angels are represented in flight converging towards the centre where, in a *clipeo* of turquoise bands, the Lamb in front of the cross can be seen. On the wall above, on either side of the two single light windows, are scenes of the Consignment of the Laws (Commandments) and the Burning Bush, see illustration 1.

Conservation condition and previous restoration

In the course of fifteen centuries, the mosaic has been subjected to earthquakes, floods, wind storms and dust. It was the focal point of a liturgy performed in the light of oil lamps, candles and incense fumes; it has witnessed the prayerful passage, over dusty carpets, of millions of the faithful and visitors. In 1847, it received the providential care of a monk named Samuel, who inserted metal pins to support portions of the mosaic that were about to fall; he protected and carried out thousands of small and large stuccoings of the lacunae produced by fallen tesserae and applied a layer of shellac and rosin (colophony) over the mosaic.

The mosaic has survived to our day thanks to Father Samuel and an emergency treatment in 1959 performed during a joint mission of the University of Michigan and Princeton University. The 1959 mission was directed by Professor H. Forsyth and K. Weitzmann, Paul Underwood and Ernest Hawkins¹. Hawkins had restored the mosaics of Hagia Sophia in Istanbul and was considered the major expert in mosaic restoration at the time.

¹ K. Weitzmann, "Mosaics," *Sinai, Treasures of the Monastery*, ed. K. A. Manafis (Athens: Ekdotike Athenon S.A., 1990), 61-83. Weitzmann K., "The mosaic in St. Catherine Monastery on Mount Sinai" in *Proceedings of the American Philosophical Society*, 110, 6 (Philadelphia, 1966), 392-405.

The current history of the conservation of the mosaic of the Transfiguration began in 2000, when the Getty Conservation Institute² of Los Angeles asked the Centro di Conservazione Archeologica (CCA)³ to carry out a two-week inspection to assess the mosaic's condition. Although we knew something about the splendor and holiness of the place, we were stunned after arriving on site, principally for two reasons: on the one hand, we hadn't expected such a rich and magnificent mosaic; on the other hand, we hadn't expected such a serious problem and the mosaic's desperate condition. In fact, when we moved close to it at the top of a wooden tower, we found that the problem of detachment of the preparatory layers from the granite structure underneath affected more than 50% of the surface, see illustration 2. It was so extensive that, at first, we could not tell whether the movement triggered by merely touching the mosaic was due to the tower's wobbling or to the mosaic's moving. It was actually the mosaic, which rippled like a sail.

To make matters worse, the central part of the apse, corresponding to the face of Christ, was convex instead of concave. It probably was still standing only because of the plant fibers inserted in the setting bed, to the friction of one tessera against another because of the vault curvature, and to the metal pins inserted by Father Samuel and the American team. At that point, among other things, we grasped the true significance of the public appeal published in the early 1960s in the *National Geographic* by Forsyth and Weitzmann to mobilize the scientific community to save the mosaic from such serious risk.⁴

The conservation program

² Jeanne Marie Teutonico, the new deputy director of the Getty Conservation Institute, requested the CCA to perform the survey;

³ The CCA, Centro di Conservazione Archeologica [Center for Archaeological Conservation] is a private firm operating on public commission in the field of conservation of monuments, works of art and archaeological sites. The CCA is based in an ancient monastery 70 km to the north of Rome, where professional training programs in conservation and laboratory activities are carried out. The company, headed by Dr. Roberto Nardi, was founded in 1982 between professional conservators who all trained at the ICR, Istituto Centrale del Restauro in Rome in the conservation and restoration of monuments, mosaics, wall paintings and archaeological finds. www.ccaroma.org

⁴ K. Weitzmann, "Mount Sinai's Holy Treasures," *National Geographic* (January 1964): 109-111.

The first survey enabled us to prepare a conservation program, which from a technical perspective was based essentially on total documentation of the mosaic, consolidation of the

tessellatum and preparatory layers *in situ*, resolving any structural problems that caused detachment, and addressing issues of cleaning and *lacunae*.

From a methodological and organizational standpoint, however, the program had a number of complex aspects. First among these was the nature of the monument: the altar mosaic of a church in use for centuries is considered and experienced not as a work of art but as a theological text, a window opening to God and the mystery of the nature of Christ, through which the faithful look in the moment of prayer. Then, there was the context in which the mosaic resides: the monastic community is highly active and vigilant, they experience the mosaic on a daily basis and have firm ideas about its significance and value. Moreover, there are monastic rules that regulate timetables and behavior and impose limitations. Then there are the requirements of the life of the church: the monks in prayer, pilgrims and tourists, who invade the basilica at an average rhythm of 3000 a day, concentrated into three hours of visiting. In addition, there is the mosaic's fame among academics, the media, and the authorities, with all that that entails. The monastery's geo-political position also poses logistical complications that must be considered in planning. Finally, the conservation team must be organized and managed in a distant and unusual location.

All the themes mentioned above, combined with scientific and technical conservation aspects, were the basis of careful planning to arrive at a definition of the *cultural project* – the document behind the conservation treatment; the instrument by which all activities and initiatives are guided in the best interests of both the monastery and the mosaic. The cultural project had to guarantee that the work went smoothly without any crisis situations to compromise either the treatment results or the serenity of monastic life.

Let us examine how all these consideration influenced the definition of the project.

The nature of the monument and its context: a mosaic that represents an icon through which prayers from the fathers and faithful are transmitted is completely different from a mosaic that is no longer “in use.” The church is a place where a centuries-old liturgy is practiced; it is not a museum, and the mosaic is not an archaeological

monument. The line that has brought the mosaic from its birth to the present has never been interrupted; the mosaic is alive, as is the life of the community of monks to which the mosaic belongs. The community itself prays around the clock every day of the year, facing the altar

and the iridescent mosaic, which reflects the light striking it in different ways depending on the time of day.

With regard to all this, the conservator must reflect on some “certainties” typical of the profession – for example, the technique chosen to integrate lacunae, an age-old and controversial question. Once the patina of dirt and lamp-black was removed from its surface, the mosaic of the Transfiguration was found to be a triumph of reflected light: a carpet of gold and glass-paste tesserae that sparkle in the daylight of the Sinai heights. The images of saints and prophets seem real: the story narrated by the mosaic takes on nuances and colors that bring it to life. In the midst of this wonder, it would be difficult to justify the use, for example, of stuccoes or non-reflective replacement tesserae simply because they are suggested by conservation principles.

But perhaps, and even more important among considerations of a technical-conservation type, is the principle by which, where there is a lively, engaged (and highly erudite) community, the conservator cannot overlook the hosts’ concerns and rigidly impose professional choices, which might well have been the product of completely different and possibly incompatible circumstances. That would be an act of obtuse pride and arrogance.

For this reason, the entire work process was an occasion for a dialogue with the monks to develop a constructive approach so that every choice would reflect the opinions of the conservators and the fathers and so that the final result of the work would be fully shared by all. Also included in discussions were the members of the scientific committee⁵ appointed by the monastery, who continuously followed the progress of the work from 2005 onwards.

⁵ The members of the Consulting Committee were: Demetrios Michaelides, archaeologist, Gaël de Guichen, conservator, Petros Koufopoulos, architect, and Costas Zambas, structural engineer;

Monastic rules: the life of the monastery is marked by precise rules, hours, liturgies, prohibitions and restrictions. For example: the hours of mass; the tidying of the church; special masses for holidays; periods of fasting and silence. Moreover, there is a rule that women cannot approach the area around the altar.

All these elements suggested that the scaffolding should be built so as to isolate the restoration worksite from the church, permitting the work to proceed with no interference in regular liturgical activity. The scaffolding was designed by the architect Petros Koufopoulos and mounted by two members of the monastic community, Father Daniel and his brother, Father Theochristos. It has direct access from the outside of the church, across the roof, so that the female conservators (the majority of the team) did not have to cross the sanctuary.

The liturgical life of the church: the monks, pilgrims and the 3000 visitors, who invade the monastery daily during its three open hours, could not do without the use of the church during the extended restoration period. Neither would they appreciate seeing a large, invasive scaffold such as the one necessary for the work. Consequently we produced a photo montage of the apse and the arch as it would be seen upon entering the church, and made a realistic print at a scale of 1:1. The print was used to cover the outside of the scaffolding, hiding it from sight. It was a backdrop of five by six meters and made the church look virtually normal. We can guarantee that many less-attentive visitors left the church convinced that they had seen the real mosaic. In any event, not one of the monks or faithful or visitors ever complained about any disturbance caused by the worksite. One of our favorite stories involves an old monk who, the day after the giant photo was mounted, complimented us on the speed of the restoration! Parallel to the scenery, other public information activities involved installing video cameras on the scaffolding, connected to monitors accessible to the public, and publishing 40,000 copies of a booklet in Arabic, English, French, German, Greek, Italian, Russian and Spanish.⁶ The booklet describes the mosaic, its problems and the principal aspects of the treatment. It was donated to the monastery to sell, with the proceeds going to establish a maintenance fund for the building.

⁶ Nardi R. Nardi and C. Zizola, *The Conservation of the Mosaic of the Transfiguration* (Rome: CCA, 2006).

The mosaic's fame among academics, the media and the authorities: a conservation-restoration treatment of a monument such as this could not overlook the work's celebrity. The presence of scaffolding and the possibility of seeing the mosaic up close represented an extraordinary occasion and an irresistible attraction for academics, media and authorities who enter in contact with the monastery's life in

some way. In the project, we therefore incorporated ideas to facilitate official visits and distribution of information.

The conservation program was approved by the Council of Monks (Synaxis) and then by the Supreme Council for Antiquities (SCA), in 2001. In 2005, when the necessary resource were made available to the Monastery, the work began. The scaffolding was produced in Athens and sent to the Sinai in a container as part of the periodic shipments the monastery organizes with Athens to transport various items.

The container also held the equipment and materials (sent previously from Italy) required for the restoration.

The scaffolding is a marvel of engineering. It is made of prefabricated hollow metallic elements (having a rectangular interior section) and was assembled on site by screwing the elements together. It has two levels, the upper one of which has a mobile section and can reach the top of the arch. The scaffolding is entirely backed by wooden panels, so that the worksite is completely isolated from the interior of the church. The entire altar zone is free from encumbrance; liturgical activity can go on without interference; restoration work can proceed without interruption; and our conservators and any visitors have free access to an area that would otherwise be off limits. The only thing we had to consider was not to carry out noisy operations during the mass. In exchange, we had the privilege of working while listening, twice a day, to the chants rising in prayer from within the church.

Given the serious detachments of the mosaic, the first operation was to plan and construct a structure (known as the "spider") in the curve of the apse, see illustration 6. It is made of hollow metal and completely separate from the scaffolding, as it is anchored directly to the walls of the church and the base of the mosaic. It is a sort of framework that allows supporting props to be applied to any part of the mosaic. This structure is composed of a

central node at the top, at the center of the apse near the central cross at the peak of the under arch; eight arms depart from the node and follow the curve of the mosaic. The node is fixed to a cross-bar soldered to a larger metal structure that spans the church from one side to the other.

The arms are anchored on one end to the node, and on the other to a track on the stone frame at the base of the mosaic. They can move to the right or left as needed. Fixed to the arms are the telescoping supports with which the mosaic was supported during the work and which we used during the entire consolidation of the mosaic while waiting for the injected mortar to set. It was of crucial importance that these supports not be anchored to the scaffolding because the vibrations would have been extremely dangerous for the mosaic and for the proper hold of the consolidant.

Before beginning the conservation treatment and parallel to the documentation, we made sure that all detached and dangerous parts of the mosaic were under control through props attached to the “spider” and pressed against the mosaic. This operation allowed us to work calmly and safely during the entire treatment process.

Finally, on 10 November 2005, the true work began. The mosaic was surrounded by lamps, computers, video cameras and special equipment. Everyone in the monastery was intrigued and actively participated in the event through visits. The visitors, following a precise itinerary inside the monastery, could watch the work “live” through a series of monitors linked to video cameras in the worksite, which were always running. Even the monks and their guests could follow the work at a distance through a monitor in the archbishop’s reception room.

The first operation performed was dry cleaning of the surfaces with gentle vacuuming and brushing. We used a silent central rotating vacuum with two flexible arms with tips as small as a dental suction device. In this way, while removing dust, there was no danger of also removing loose tesserae, which were larger than the suction device. During this operation, we became aware of the first major problem, which was only partially identified during the planning phase: the presence of a large number of

tesserae detached from their setting bed. We thus postponed the other cleaning phases in order to continue the documentation, consolidation of tesserae and in-depth consolidation. To stabilize the tesserae we tried out various materials, infiltrated with a syringe behind the tesserae; finally we found that the best result was obtained by extracting the tessera from its bed and reapplying it on a bed of lime mortar and finely sifted stone powder. Because of the large number of unstable tesserae, the consolidation was carried out as we went along, as the other operations were gradually completed.

After a first pass with dry cleaning to remove loose deposits, we continued the cleaning by applying poultices of a solvent mixture held in contact with the surface with Kleenex and paper-pulp for to remove residues of the layer of lacquer and rosin and the oily deposits produced by candles, lamps and incense. Once the deposits were dissolved, they could be removed by gently scrubbing the tesserae with toothbrushes and rinsing with distilled water. The tesserae colors finally returned to shining as they once did, while also maintaining their patina of age.

The cleaning slowly revealed the presence of innumerable stuccoings performed by Father Samuel, in lime and cement, and painted in imitation mosaic. The stuccoing had been done where there were lacunae and detachments, precisely where the ongoing problem had forced us to treat it with in-depth consolidation and consolidation of tesserae. Thus, we had to remove all the stuccoing from 1847 and, in the process, use the lacunae as entry points for our consolidation – an essential operation for providing the mosaic with its lost stability.

The areas to consolidate were carefully prepared: we drilled small holes in the lacunae zones corresponding to detachments using hand drills; after that, we could access the area beneath and remove the pulverized deposits of original mortar with a dental suction device. Where the mortar's thickness and condition permitted, the gaps were also washed with distilled water injected by syringe. When the area had dried, we injected the consolidant, which was a pre-mixed hydraulic mortar, chosen for its characteristics of lightness, high penetrability and absence of soluble salts. The operation required great care to avoid weighing down the surface layers, which could have collapsed. We had to give the mixture ample time to set and take on its function of anchoring the surfaces. Starting from the bottom, and using several

infiltration points in the same area, we gradually inserted the consolidant until the detached area was filled. We left as much as three days between one infiltration and the other so that the water in the mix could evaporate and we could continue upwards. As the work proceeded, we propped the areas being consolidated, thanks to the “spider” mechanism, in order to avoid even the slightest movements of the detached layers.

The consolidation was a long process, performed in progressive stages, after times of rest and continuous verification.

It finished after three years, during which we returned to already consolidated zones, once the process of drying and shrinking of the injected mortar had taken place, to add consolidant where it had not completely filled the voids. The convex part at the center of the apse, corresponding to the face of Christ, required a different approach. In this area it was necessary to understand the causes of damage before we could go forward. From the attentions of Father Samuel, we knew that the problem was an old one, already serious in 1847. We also knew from the American intervention in 1959 that the monk’s efforts had not resolved the situation. Therefore we decided to investigate further in hopes of getting at the root of the problem.

We knew for certain that the ultimate cause of damage was the detachment of the mosaic’s preparatory layers from the granite structure, but we were afraid that there might be crack or disorder in the granite structure itself, and thereby a problem of a structural type. It would be difficult to evaluate its extent and could call for major structural consolidation. For this reason, we decided to fix on the entire area two

layers of cotton gauze and open a rectangular (20 cm per side) section of mosaic next to Christ’s face in the area of gold tesserae. We cut only on three sides, excluding the upper side, which acted as a hinge to lift the gauze-covered mosaic and reach the layers underneath without actually removing it. There, we found a red bedding layer, typical of the background for gold tesserae. Once this layer was also covered in gauze, we deepened the cut and removed the bedding layer, finally arriving at the granite structure underneath.

Our test area was situated right at a junction of blocks of the vault, so we were able to ascertain that the wall structure was intact and rule out the existence of a structural problem. At the same time, we could verify, in section, on the four sides of the opening, that there was

a highly accentuated detachment (average 5 cm) of the deepest layer of the bedding layer from the granite supporting structure, as well as the presence of heavy deposits of pulverized mortar. The void created by this detachment beneath the mosaic, between the granite structure of the vault and the mosaic's setting bed, was so ample that it permitted us to connect our test area with another small opening created by removing a stucco done by Father Samuel some 30 cm from the test area, and insert a micro-telecamera with LED lighting to check the condition of the vault's structure at that point.

This inspection also showed that the vault's structure was intact and confirmed that the origin of the damage was due to detachment of the mosaic's setting bed from the granite, caused by infiltrating water. Over the centuries, the water had percolated down from cracks opened by earthquakes at the top of the arch and eroded the original layers, eventually pooling right in the mosaic's most outward-jutting point.

Once the picture was clear, we proceeded with treatment. We filled the detachment with consolidation mortar, replaced the removed setting bed with lime mortar, calcareous stone powder and vegetable fibers like the original, and closed the test area by re-setting the tesserae on the new bed. A coat of red ocher was first painted on the setting bed like the original. Once the area had been consolidated, we removed the gauze.

When the consolidation of the mosaic was finished, we could remove the pins and bars inserted by Father Samuel on the arch, which was a long and delicate mechanical process.

The reasons for this choice were dictated by the very nature of the pins – iron, which is subject to oxidation (rusting), and a possible cause of damage, as well as the fact that their function as a supports was replaced by the consolidation mortar.

We left only one pin and bar as documentation of a now-historic conservation treatment of notable quality. We did not remove the pins applied by the American team in 1959 in the area of Christ, first because they are in stable copper and thus do not harm the mosaic. Second, it would have been highly risky because they were embedded in a thick layer of hard and resistant mortar; third, they are located in the most delicate area of the surface and thus can contribute to the mosaic's static support. All their stuccoing and integrations, however, were removed and replaced.

When the cleaning and consolidation were finished, we moved to treatment of the numerous lacunae left by the removal of Father Samuel's old restorations and other losses from the past 150 years. In the project phase, we had contemplated three possibilities for filling lacunae, leaving the final decision to the moment when cleaning had provided a clearer picture of the situation and when discussions with the monks and the consulting committee had reached a consensus.

The first possibility was integration with a mortar that replicated the level and chromatic tone of the setting bed of the tesserae (light brown); the second possibility was to use a mortar

with the imprint of the tesserae and watercolor retouching; the third possibility was to use new tesserae.

After trials and lengthy debate, we chose the third possibility. There were many reasons for this decision, and we list some of them here in no particular order:

- we can now record all treatments performed in 1:1 scale and manage documentation of great accuracy;
- the monks' opinion was strongly in favor of this approach because of the use and significance of the mosaic;
- the consulting committee also supported this solution;
- at the time of treatment, tesserae of suitable quality and color for our restoration were available on the market;
- only replacement tesserae would supply the mosaic with the response to light that has made it a masterpiece and an instrument of prayer;
- only tesserae respond to ageing like the original material; we ourselves, after three years of almost daily contact with the mosaic, were convinced that it was the best choice.

After ordering the material from Venice,⁷ we began the lengthy work of integration. Using a palette of 34 colors, we applied the tesserae to a setting bed made of mortar similar to the

⁷ Orsoni, Via Cannareggio 1045, 30121, Venice, Italy.

original. Over this mortar we painted the background color as it had been originally with mixed watercolors (red, black, yellow, gray), depending on the type of tesserae being applied. We then applied the tesserae on the setting bed thus prepared. We followed the original design to carry out integrations, even copying repetitive lines and filling the imprints left by original tesserae on the setting bed; no integrations were ever done by freely interpreting or departing from the original design.

Probably, using new tesserae to integrate a mosaic is a choice that we would have balked at only a few years ago. Today, we could allow ourselves to do this thanks to rapid evolution in documentation techniques. With a precise and efficient instrument such as the digital documentation devised for this project – which is easy to implement and manage – the risk of

producing confusion between the original and the restoration is very low. To the contrary, it would have been a mistake to carry out operative choices that did not exploit new technological opportunities, spoiling the

result of the conservation treatment in the name of principles that, in certain conditions, can be obsolete. Once the direct treatment of the mosaic was finished, we tackled the long task of editing the documentation and publishing the results. All the information gathered, records produced, images, graphic maps, and computer materials will flow into the monastery library to form a collection that will be the memory of another chapter in the magnificent, centuries-old history of St. Catherine's.

The conservation of the mosaic of the Transfiguration followed a program built around the technical requirements of the mosaic, the professional principles of the profession, the expectations of the monastic community, the requests of the Egyptian authorities, the observations of the consulting committee, the needs of the public and the faithful, and the desire to provide maximum circulation of the results obtained.

The best vehicle for all these elements was the *cultural project*: a plan in which dialogue and mediation were our daily bread; in which the results were the fruit of the contribution of all concerned. Perhaps, precisely for this reason, it allowed us to bring a complex operation into port, working in the knowledge that we were honoring our commitment to the mosaic, to the

monks and to the monastery's life, to the Emirate of Qatar and, above all, honoring the spirit of tolerance between peoples, religions and cultures that has marked the monastery for fifteen centuries.



Illustration 1. General view of the main arch (Foto Araldo De Luca - CCA)



*Illustration 2. Graphic documentation of mosaic detachments from the wall of the main arch.
In red the surfaces completely detached.*



Illustration 3. A detail of the tondo depicting Longinus the Abbot (Foto Araldo De Luca - CCA)



Illustration 4. A view of the apse during the conservation work. (Foto Araldo De Luca - CCA)



Illustration 5. A view of the arch during the conservation work. (Foto Araldo De Luca - CCA)



Illustration 6. The metal structure (the "spider") supporting the mosaic in the apse during consolidation (Foto Araldo De Luca - CCA)

Bibliography

Nardi Roberto, Zizola Chiara. 2006. *The Conservation of the Mosaic of the Transfiguration*. Rome: CCA.

Weitzmann Kurt. 1964. "Mount Sinai's Holy Treasures." *National Geographic* 125 (January 1964): 109-111.

Weitzmann Kurt. 1966. "The mosaic in St. Catherine Monastery on Mount Sinai." *Proceedings of the American Philosophical Society* 110, 6: 392-405.

Weitzmann Kurt. 1990. "Mosaics." In *Sinai, Treasures of the Monastery*, edited by K. A. Manafis, 61-83. Athens: Ekdotike Athenon S.A.